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## SELECTED PAPERS.

### *Sketches of the Medical School of Vienna.*

"Id quidem infinitum est in hac Urbe."
*Cicero, de Finibus.* Lib. V.

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#### THE UNIVERSITY.

THERE are two German Universities in the Austrian Empire, Vienna and Prague; and five Lyceums, Lemberg, Graetz, Olmutz, Klagenfurt, and Linz. The difference between the Universities and the Lyceums, so far as concerns medical study, is that surgery alone is taught in the latter, both medicine and surgery in the former.

The Emperor Frederic II. as appears from a work which he composed, and which bears for title, "*De Arte Venandi cum Avibus*," had himself made numerous observations in Comparative Anatomy.* He is quoted as an authority by Professor Blumenbach. Frederic is entitled to the everlasting gratitude of mankind, for the exertions which he made in opposing the superstitions and the prejudices, which during the thirteenth century, pressed down into the dust, knowledge of almost every kind, especially medical knowledge. He got Galen translated, gave orders that every year in Palermo, a human body should be dissected, and commanded that no man should be permitted to practice surgery who had not studied

* The best edition of the above-mentioned work, is that of Professor Schneider, printed at Leipzig in 1788, in two volumes quarto.

anatomy on the human subject. It was in the year 1237, that he granted leave to the Senate of Vienna to establish a University.

This institution was considerably improved by Albert I. in 1296. Ottokar of Bohemia added to the number of teachers, and augmented their incomes. Under Albert II. the University of Vienna flourished still more; he too added to the number of professors, and granted them public *auditoria* and free dwellings in the Imperial Castle. Duke Rudolph IV. in 1364, removed the academical *auditoria*, and the dwellings of the professors to the *Minoriten*-Cloister, and to the houses of the former Knight-Templars, as these were more still and retired. In 1365, Pope Urban V. issued a bull of ratification for the juridical, medical, and philosophical faculties of the University. On the solicitation of the Duke Albert III. the theological faculty was added by Urban VI. In 1366, this University was arranged anew, after the model of that of Paris, and students were now admitted from the Austrian, Rhenish, Saxon, and Bohemian nations. Under Albert III. in 1388, the number of professors rose to thirty, and considerable additions were made to the accommodations of the University. Ferdinand II. in 1622, gave over this institution into the hands of the Jesuits, who, though they were themselves shut out from the professorships, yet knew how to retain the whole government of the University till the year 1754, when the learned and enlightened commentator on Boerhaave, Gerard Baron Van Swieten, succeeded, against much opposition, in introducing very important improvements. He new-modelled the whole medical faculty, and arranged it in a manner much more likely to answer its professed object than it had hitherto done. He introduced professorships of chemistry and of botany; and the establishment of a botanical garden, and of a complete collection of chemical and surgical instruments, was wholly owing to him. He also brought forward a proposal for a professorship of midwifery. He drew the most celebrated men of all classes to Vienna, assuring them of adequate salaries. The University of Vienna is at present the richest in all Germany. Under the reigns of Maria Theresa, Joseph II., Leopold II., and the present Emperor, it has so risen in reputation amongst the Catholic Universities, that it now occupies, especially as a medical school, the very first rank.

The buildings of the University of Vienna are situated in the town, which is small, and is separated by a wide *esplanade* from the suburbs, in one of which is the *Allgemeine Krankenhaus*, or General Hospital. The hours of lecturing in the University

interfere with those of the visits in the Hospital. Hence the lectures are but rarely attended by those foreigners who visit Vienna in pursuit of their medical studies; amongst whom are found students not only from the western and northern countries of Germany, but from Hungary, Swisserland, Italy, Russia, Denmark, Holland, and even France and England, and it might have been added, from the United States, (Am. Ed.) and with them many who have already practised medicine, and occasionally professors from distant Universities. It is chiefly from the admirable arrangements of the clinics for internal diseases, for diseases of the eye, and for lying-in women, and from the celebrity of the professors of these three clinics, that foreign students are attracted to Vienna.

In order to be admitted a student of medicine in an Austrian University, it is necessary that the candidate should lay before the Director of Medical Study, certificates of his having studied philosophy for three years in a Lyceum. Under philosophy are comprehended the Latin and Greek languages, History, Mathematics, Natural and Moral Philosophy, and Religion. The school-year in Vienna begins with November, and ends with august. The course of medical study extends to five years, and comprehends the following lectures:

First year: 1. Introduction to Medico-Chirurgical Study, and Natural History, by Professor Von Scherer. 2. Anatomy, by Professor Mayer. 3. Botany, by Professor Joseph Von Jacquin.

Second year: 1. Physiology, by Professor Prochaska. 2. General Chemistry, by Professor Joseph Von Jacquin.

Third year: 1. General Pathology and Therapeutics, by Professor Hartmann. 2. Midwifery, by Professor Boer. 3. Materia Medica et Chirurgica, by Professor Hartmann. 4. General and Special Pathology of External Diseases, by Professor Von Rudtorffer. 5. Ophthalmology, by Professor Prochaska. 6. Demonstration of Surgical Instruments and Bandages, by Professor Von Rudtorffer.

Fourth year: 1. Special Therapeutics of Internal Diseases, by Professor Von Hildenbrand. 2. Clinic for Internal Diseases, by Professor Von Hildenbrand. 3. Veterinary Medicine, by the Director of the Veterinary School.

Fifth year: 1. Special Therapeutics of Internal Diseases, by Professor Von Hildenbrand. 2. Clinic for Internal Diseases, by Professor Von Hildenbrand. 3. Medical Jurisprudence, by Professor Bernt. 4. Medical Police, by Professor Bernt.

The students of medicine, a class who in Vienna are strictly

distinguished from the students of surgery, are not obliged to attend the following lectures:

1. Practical Surgery, by Professor Kern. 2. Practical Ophthalmology, by Professor Beer. 3. General Pathology, Therapeutics, and Materia Medica, by Professor Herrmann. 4. Special Therapeutics of Internal Diseases, by Professor Raimann.

Such are the ordinary lectures on medicine in the University of Vienna. Those indeed of Professors Von Hildenbrand, Kern, Beer, and Raimann, are delivered in the General Hospital. For none of the above lectures is any fee paid by those who are enrolled as students in the University. The expence of enrollment is fifteen paper-guldens half-yearly, which at the present depreciated state of the Austrian paper-money, is about nine shillings. For the lectures and clinic of Professor Beer, strangers pay twenty-five paper-guldens yearly. The lectures of Professors Herrmann and Raimann are designed for candidates in surgery, and are seldom attended by students of medicine.

The following are accounted extraordinary lectures:

1. Diseases of Women and Children, by Professor Boer, 2. Philosophical and Physical Knowledge necessary for Surgeons, by Professor Pissling. 3. Duties of those who attend the Sick, by Professor Schmidt.

For these lectures a small fee is paid. Those of Professor Schmidt are delivered on the Sunday evenings.

The lectures of Professor Prochaska on Physiology, and of Professors Hartmann and Von Hildenbrand, are given in Latin: the others in German.

The students of practical anatomy carry on their dissections in the University. To foreigners, subjects are supplied at the price of seven paper-guldens. They are brought from the General Hospital, but are not so plentiful as in the dissecting rooms of Paris. All dissection in the General Hospital is at present strictly forbidden; but it is not unfrequent to obtain leave to dissect in the Military Hospital, which is closely adjoining to the General one, whence the dead bodies are furnished.

Besides the public lectures, several of the professors in the University of Vienna give occasional *Privatissma*. By the special order of government, foreigners only are allowed to take advantage of these private courses. Professor Mayer gives private demonstrations on anatomy in this way, or in any particular part of anatomy which is desired. Professor Von Rud-

torffer gives over the *privatissma* on bandages and surgical instruments, to his assistant. Professor Kern usually does the same in regard to surgical operations. The assistant also in the obstetrical clinic gives *privatissma*. Professor Beer and his assistant, Dr. Rosas, give similar courses on the operative surgery of the eye. The number of students admitted to a *privatissmum* is generally six.

In all the public courses of medicine and surgery, an examination of the enrolled students is held by the several professors every half-year, in presence of one or more of the other office-bearers of the University. In order to be admitted to examination for a degree in medicine, the candidate must produce certificates of having acquitted himself respectably in three semestral examinations, of having completed his fifth year of study, and of having publicly treated within the last half-year two patients in the clinic for internal diseases, the cases of which patients he must at the same time present to the faculty, written in Latin.

He who aspires to the degree of *Magister Chirurgiæ*, a rank analagous to that of member of one of our Colleges, is obliged to follow nearly the same course of study as the candidate for a degree in medicine. It is different in regard to the common civil, and country surgeons, as they are called. These study only two years, and so far from being required, are scarcely admitted to attend the lectures and clinic of Professor Von Hildenbrand, or the Lectures in Latin of Professors Prochaska and Hartmann. Neither in Austria, nor so far as we have seen, in any part of Germany, is this class of surgeons respectable. They are inferior to the *officiers de sante* of France, still retain the helmet of Mambrino, and execute at once the duties of barbers and surgeons.

One of the public examinations for the degree of master in surgery consists in the performance of two operations on the dead body. The operations are determined by lot. The candidate describes the surgical anatomy of the parts, lays down the indications for the operations, performs them upon the dead body which is before him, and applies the proper bandages.

Degrees are granted by the University of Vienna in Ophthalmology. Doctors in Medicine and Masters in surgery are considered as having taken this degree; but no one else can publicly practice as an oculist in the Austrian States, who has not attended the lectures of Professor Prochaska, and undergone an examination by him on the diseases of the eye.

The marked distinction of students of medicine from students of surgery, the severe course of study to which the former are

subjected, the neglectful and almost contemptful education of the *inferior* order of surgeons, and the uncommon opportunities for studying diseases of the eye, especially under men of such reputation as Prochaska and Beer, are prominent points in the Medical School of Vienna, so far as the University is concerned. The state of the profession throughout Austria corresponds exactly with the provisions made by the government for medical and surgical education. The physicians are distinguished for their extensive and practical knowledge. Surgery on the other hand seems to languish; and we had not been long in Austria before we saw the full force of a remark, which was made to us by the celebrated Soemmering, when we visited him at Munich, namely, that luckily in England, surgery was studied by gentlemen. As for what the Germans have termed Ophthalmology; the science of Prochaska, the enthusiasm, the profoundness, and the amazing dexterity of Beer, have contributed to render this one of the favourite studies, both of those destined to practice surgery, and of those who aim at the *summi honores medicinæ*.

### MEDICAL JURISPRUDENCE.

Honour, liberty, and life, in so far as they depend upon medico-judiciary reports and inspections, are not made the sport of ignorance and carelessness in Austria. Medical Jurisprudence forms an indispensable part of study in the University of Vienna, and certain extraordinary means of promoting an accurate knowledge of this branch of medical science have been adopted by the government, and are well worthy of imitation. These consist in the publication of a code of regulations, by which all medico-judiciary inspections are to be conducted throughout the empire, and reports to be drawn up; and in the performance of inspections publicly upon the dead bodies which are found in suspicious circumstances, and which not being at first recognised are carried to the dead room of the General Hospital. Due notice is given to the students at what hour such inspections are to take place, and they have thus an opportunity of seeing those regulations put in practice, which they themselves will one day be called to fulfil.

We may here notice that after every death in the Austrian dominions, the physician or surgeon who attended is required to sign a paper, certifying the disease, and whether it were contagious. If it was contagious, the law obliges the relatives to have all the bed clothes fumigated. In Vienna there is an establishment for this purpose, where on paying a small sum, the fumigatiou is properly performed.

MUSEUM OF PROFESSOR PROCHASKA.

There are several anatomical museums contained in the University. That of Professor Prochaska is the only one which excites any peculiar interest.

There is a primitive simplicity, a condescension, and a gentleness in this old man, so celebrated at the same time for his genius and his learning, which endear him to every one. We had no sooner announced to Professor Prochaska the object of our visit, than he put into our hands a foot, which at first sight, had nothing of an uncommon appearance, except that its surface was of a deep vermillion colour. One might have supposed that it had been roughly coloured, and varnished with a brush. He then gave us a small microscope, and desired us to examine the foot in a good light. We had no sooner approached to the window, and looked at the foot through the microscope, than we discovered that its cutaneous vessels were beyond conception minutely injected. The vermillion colour of the preparation arose from the injection filling on every point of the surface of the cutis, one might almost say a myriad of arteries.

In a second preparation we saw the periosteum of the femur almost equally minutely injected. This preparation seemed to prove the non-vascularity of cartilage, for as soon as the injected vessels of the periosteum reached the border of the articulating surface of the knee, they were most distinctly seen to return upon themselves, and not one could be discovered, even with the aid of the microscope, to be prolonged into the cartilage, which had retained its white, or rather assumed from desiccation, a yellowish colour. Professor Prochaska has never been able to inject any of the cartilages. He is therefore inclined to believe that the patella which Ruysch has described, the internal cartilaginous surface of which exhibited a considerable number of vessels, must have been diseased.

Professor Prochaska next shewed us a small box of similar Lieberkuehnian preparations, which had cost him, he said, nearly ten years. These consisted of injected and prepared membranes, and of thin sections of other organs, fixed upon plates of glass in the same way that other microscopical objects usually are. When viewed through the microscope, and especially those of the kidney, these preparations displayed a minuteness, a beauty, and a variety, which even far exceeded our expectations. Indeed we can conceive nothing in this kind of preparations more beautiful than one of those of which we

now speak, in which we saw the capillaries of the cortical part of the kidney, forming on each side of their trunks those little globules, which both Malpighi and Mascagni supposed to be hollow glands, in which the urine was deposited immediately after being secreted.

We accompanied Professor Prochaska from his house to his museum. Here we found whole heads and extremities injected microscopically. He told us that he had injected even whole subjects in that way. He shewed us a series of preparations, in which the periosteum, the peritonæum, the mucous membrane of the nose, and that of the intestines could be compared. It is from the redness which a part assumes, when well-injected, that Professor Prochaska estimates its vascularity. Some parts, such as the nails, hair, epidermis, cartilages, and arachnoid membrane, never admit injection. Other parts which exhibit scarcely any vessels immediately after injection, become extremely red on being dried; displaying, when viewed through the microscope, a tissue of innumerable arteries. Such is the case with the internal surface of the cutis, with the nerves, and with the salivary glands.

We were surprised, when formerly at Paris, to hear the antiquated term of *parenchyma*, employed by some of the best anatomists, and used, not as a mere convenient denomination for a set of organs the nature of which is but imperfectly understood, but as a name really indicative of the texture of the viscera in question. Professor Prochaska, while on the one hand he altogether rejects the doctrine of a *parenchyma*, has been led from his injections to reject equally the opinion of Ruysch, and he thinks that Ruysch had been led to believe that every solid animal substance was composed of nothing else than vessels, not so much from the excellence as from a faultiness in his preparations.

The Ruyschian, or Lieberkuehnian art of injecting, is possessed by at least four living anatomists. Three of them have had communications between themselves upon the subject, and for aught we know, the fourth also; but none of the four has deigned to give the secret to the world. Yet medicine is a republic in which there ought to be a community of goods.*

Professor Prochaska has declined publishing any views taken

* We learn that a few of Lieberkuehn's own injected preparations are on sale in Hamburg, for the modest sum of 450 pounds! There is perhaps less secret in his art than is generally imagined. We have even seen some turpentine and cinnabar injections, since our return from Germany, which if dried and submitted to the microscope, would probably equal those of Professor Prochaska.

from his microscopical preparations, on account of the great expense attending the minute and delicate engraving which they would require. When we were at Florence, Signor Serantoni, the draughtsman of Mascagni, shewed us the proofs of a series of engravings representing microscopical views of different parts of the body, with which that celebrated anatomist was occupied when he died. They were twenty engravings in number, and it was meant to print them as a *prodromus* to a complete collection of anatomical plates which Mascagni had wished to give to the public. We fear, however, that even the *prodromus* has not yet been published.

The museum of Professor Prochaska contains a number of interesting preparations besides the microscopical ones. We noticed particularly the following:

1. A luxation of the os humeri from external violence, in which the head, and about three inches of that bone, had been forced into the cavity of the thorax, between the third and fourth ribs. This portion of the os humeri had remained there for such a length of time before the patient's death, that nature had proceeded considerably in an attempt to remove it. The internal spongy substance of the head of the bone had been already removed by the absorbents, and a mere crust remained, which seemed to consist chiefly of the cartilage and periosteum.

2. The bones of a person who had been affected with general *mollities ossium*. All the vertebræ in this preparation were seen glued together into one mass in consequence of the disease, the sacrum was scarcely distinguishable, the ribs were bent inwards, and marked by the impression of the arms, which the patient had kept sunk into his sides, and all the bones were extremely light.

3. The cranium of a young man of eighteen years of age, extraordinarily disfigured, from a polypus which had originated in the nose. In the year 1786, this boy had been brought to Professor Prochaska in Prague, affected with amaurosis and protrusion of each eye from the orbit, the bones both above the orbits and on the sides of the nose being tumefied, and the respiration through the nostrils difficult. These symptoms continued to the year 1791 without pain, and with little other inconvenience than the blindness. By degrees the eye-balls became more protruded; the tumefaction over the orbits, at the root of the nose, and in the whole upper jaw increased; the arch of the palate became swoln and projected into the cavity of the mouth; and towards the end of life a discharge of ichorous matter, with frequent and excessive hemorrhage,

took place from the nostrils. In the September of that year, he died by suffocation. At the time of his death, the root of the nose, and each of the superior maxillary bones were so enlarged, that little more than the apex of the soft part of the nose could be seen. On dissection, the right nostril was found in its anterior part exceedingly dilated, the cartilaginous septum being pushed towards the left side. Posteriorly, both nostrils by the absorption of the septum had united into one ample cavity, which was occupied by a large tumour, remarkable for its numerous spongy excrescences, and which by its size and weight had produced much tumefaction of the arch of the palate. On opening the cranium, it was found that the anterior and middle lobes of the brain had assumed an unnatural ash-colour, and that at that part where the anterior lobes lie upon the ethmoid bone and orbitary processes of the frontal bone, the brain along with the dura mater were dissolved into a pulp of the same colour as the tumour of the nose, with which they were *actually in contact*. From the destruction of the substance of the brain in its inferior part, no nerve could be discovered from the olfactory to the auditory. The head being macerated, a heavy mass of tumour fell out from the base of the cranium and from the nose. The tumour, which contained nothing osseous, but was of a lardy and cartilaginous texture, penetrated by soft prolongations into the bony tumefactions which projected above the orbits, filling up all the interstices of the lamellæ, of which these tumefactions were formed, and emerging immediately under the integuments of the forehead. On examining the cranium as it is preserved in the museum of Professor Prochaska, we found the orbitary processes of the frontal bone, the ethmoid bone, the vomer, the turbinated bones, the little wings of the sphenoid bone, and its middle part, except the anterior clynoid processes, which adhered by osseous filaments to the remaining part of the sella Turcica, the anterior part of the occipital bone, and the apices of the petrous portions of the temporal bones as far as the carotid canals, were so completely consumed, that the vast cavity of the nostrils, along with that of the mouth, opened into the cavity of the cranium. Forth from the cranium also, as well into the orbits as into the supraorbitary tumefactions already described, there were many larger and smaller openings. The superior maxillary and nasal bones were much expanded, and so thinned away that they presented various gaps, opening into the cavity of the nostrils. The palatine processes of the superior maxillary bones had disappeared; the pterygoid process of the sphenoid

bone, on the right side, had so receded in its superior part, that the spheno-palatine foramen, much enlarged, opened into the zygomatic fossa; the left antrum Highmorianum had disappeared from compression, and the right opened backwards by a large hiatus.

4. The internal parts of generation, taken from a woman who had died of ascites. Each ovary gave origin to a large branchy tumour, not unlike in its ramifications to the fimbriated extremity of the Fallopian tubes, but more knotty, and still more strongly resembling in form a vegetable production.

5. Several acephali, in two of which, not only the head, but the superior extremities, and, in a great measure, the thorax, were wanting. When at Berlin, we had an opportunity of examining the collection of acephali in the Walterian Museum; and a series of preparations, illustrative of the origin of these monstrous fœtuses, was particularly pointed out to our attention by Professor Rudolphi. The first preparation of this series consisted of an ovum containing an embryon, in which the upper part of the head presented the appearance of a vesicle ready to burst. In the second, a similar vesicle had actually given way, and the remnants of the superior part of the cranium were floating in the liquor of the preparation. In the third, these floating remnants had partly disappeared. In the fourth, the fœtus was what is termed acephalous, a mere tubercle remaining in the situation of the head. The conclusion drawn from this series of preparations by Professor Rudolphi was, that acephalous fœtuses were the results of hydrocephalus in the embryon.

### THE GENERAL HOSPITAL.

In the suburb of Vienna, called the *Alster Vorstadt*, are situated the General Hospital, the Josephine Academy, and the great Military Hospital. Hence, in this suburb are lodged almost all the foreigners, as well as many of the students from the different parts of the Austrian dominions, who come to Vienna in pursuit of medical study.

The *Allgemeine Krankenhaus*, or General Hospital, is one of the noblest institutions of the patriot-Emperor Joseph II. It is one of the most extensive buildings in Vienna, and considerably the largest hospital which we have seen, even excluding the Lunatic and Foundling Hospitals, which are both situated near it, and are, in certain economical respects, connected with it. The greater part of the hospital is of two stories in height. It is arranged in seven large quadrangular courts, the first of which upon entering, and the largest, is

laid out with grass-plots and shaded alleys; and contains, in a building separated from the rest of the hospital, the house of the director, the medical clinic, a lecture-room, and the museum of pathological anatomy. The physicians, surgeons, and assistants, have apartments in different parts of the hospital.

Like most of the hospitals in Germany, the *Allgemeine Krankenhaus* of Vienna is under the inspection of a medical director, who must reside within the walls of the hospital. This office was filled by Professor Von Hildenbrand; and is looked upon as one of great trust and high respectability. The whole economy of the institution is thus placed under the immediate and constant view of a stern, but, at the same time, liberal and well-informed inspector.

The number of sick-rooms is 111; of which 61 are for male, and 50 for female patients. These rooms are each 26 feet long, and 17 feet broad: they are lofty and clean. The windows are large, but are all raised eight feet from the floor. The advantages of being able, by this plan, to place beds near to the windows, and of avoiding the stream of air which blows upon the beds when the windows of an hospital are low, are perhaps over-balanced by the disadvantage of being unable readily and completely to ventilate the apartments. The beds are placed two feet and a half from each other. The bedsteads are of wood: they are without curtains. Square pieces of dark green cloth, hung from wooden supports in the form of the letter T, are occasionally used to supply the want of curtains: for instance, in moderating the light around a particular bed, or in concealing a patient, during the last moments, from the view of those who are lying around him. Though long accustomed to the daily view of hospital-wards where no substitute was employed for curtains, we confess ourselves favourable to their use, having seen their great advantages in the Hôtel-Dieu of Paris, and in other hospitals. In beds without curtains, the patients are exposed to the eye of every stranger; whereas, when the contrary is the case, they may look upon themselves as in some measure at home; they can guard themselves from the cold of a large apartment, and are not forced to crowd around the fire-place; they can procure for themselves a certain degree of obscurity, favourable to repose; and conceal themselves from those by whom they are surrounded. The beds of the General Hospital are indifferent: the bed-coverings good. A few minutes before the visit of the physician or surgeon, a quantity of juniper wood is burned on a shovel carried round in each ward. We

never observed this practice produce any irritation even in the patients affected with pulmonary complaints, and it completely removes the fœtor of a sick room. The wards are heated by a large earthen stove placed in the centre of each.

The patients treated in the General Hospital, independently of the Lunatic and Foundling Hospitals, are arranged into five classes. Of these, lying-in women form one; the remaining four consist of patients affected with internal diseases, external diseases, diseases of the eye, and venereal diseases. To each of these five classes, different parts of the hospital are appropriated. The total number of beds is two thousand, and in the winter season this number is nearly filled up. The following are the numbers of patients treated during the years 1810, 1811, and 1812, in the General, Lunatic, and Foundling Hospitals.

| | Medical and Surgical. | Lunatic. | Lying-in. | Foundlings. | Total. |
|---|---|---|---|---|---|
| 1810 | 12,374 | 251 | 747 | 2,928 | 16,300 |
| 1811 | 11,709 | 512 | 1,115 | 2,843 | 16,179 |
| 1812 | 10,358 | 212 | 1,489 | 2,809 | 14,868 |

The average number yearly in the General Hospital alone, has, in the succeeding years, amounted to from 15,000 to 17,000.

Three classes of the patients of the General Hospital pay for their maintainance: the fourth, and, we believe, the most numerous class, are admitted gratuitously. The highest rate is eleven pence daily. Those who enter upon this rate have a separate room, particular attentions, and a very good bed; but they must provide themselves with sheets and washing. Forty separate rooms are appropriated for this class. The second rate is six pence daily: the patients of this class have no separate room, but in other respects, are treated as the former. The third rate is, for the inhabitants of Vienna, two pence, and for strangers, two pence half-penny, daily. However great and undeniable the advantages may be, of institutions in which those of small fortune may receive medical attendance on paying a moderate stipend, and thus the patrimony of the poor be preserved to the poor, yet the mixing of those who pay, and of those who are admitted gratuitously, in one hospital, nay, even in the same wards, by no means appears a proper arrangement. Neither are we friendly to those immence palaces, we had almost said little towns, which we meet with so frequently in Italy, and occasionally in Germany, under the name of hospitals. Whenever the number

of patients in an hospital exceeds a few hundreds, the public may look for abuses and mismanagement.

The pharmacy of the General Hospital is an extensive and well-regulated establishment. The Pharmacopœia Austriaca, of 1814, is followed. The authors of that edition have had especial regard to the cheapness of the articles admitted. They have, for this reason, struck out many articles of foreign produce, such as, balsamus copaivæ, balsamus Peruvianus, cascarilla, cinnamomum orientale, moschata, quassia, sarsaparilla, scammonium, succinum, zingiber. The medical plants, for instance, aconite, are brought chiefly from the subalpine parts of Austria. For the sake of economy, in the commencement of the cure of intermittent fever, it is almost general in this hospital to prescribe a decoction of the root of the common taraxacum; and in cases of chancre, instead of the solid nitras argenti, a solution is employed, which is prepared by digesting for some days, in a warm room, a quantity of filed silver with nitric acid.

The physicians and surgeons have the titles of *Primar-Aerzte* and *Primar-Wundaerzte*. General-chirurgus Rust, who is now professor of clinical surgery at Berlin, lately occupied the place of a *Primar-Wundarzt*, in this hospital. Dr. Schiffner, the son-in-law of Professor Prochaska, is one of the *Primar-Aerzte* whose visits are most numerously attended.

### THE CLINICS.

There are five clinics in the *Allgemeine Krankenhaus;* two medical, a surgical, an ophthalmological, and an obstetrical. One of the medical clinics is designed for students of medicine, and the others for students of surgery.

### THE MEDICAL CLINIC.

The medical clinic, or Schola Practica, was united with the General Hospital in the year 1784. It consisted of twelve beds, and was under the care of Maximilian Stoll. In the year 1787, he was succeeded by Reinlein, and in 1795, by John Peter Frank. It was especially under Frank that this institution flourished, and became much frequented by foreigners. The number of beds was increased to twenty-four, and an anatomico-pathological museum was established. In 1804, Frank went to Wilna, as a Russian state-counsellor, and thence to St. Petersburg. He was succeeded, for a short time, by Benth; and in 1806, by Von Hildenbrand, who, for thirteen years, had been professor of medicine in Krakau and Lemberg.

There can be nothing, we think, more certain than that to

be really useful, a clinic must consist of a small number of patients. In a clinic, the patients are not to be merely seen, but to be observed; not to be observed by a man of experience merely, but their symptoms and treatment to be made the subjects of investigation by those who are yet unaccustomed to the practice of medicine. The clinical visit ought not to surpass the space of an hour. Now in that space of time, it is impossible to visit more than twenty-four patients. Frank had rarely above eighteen in his clinic at Pavia.

Particular attention ought to be paid, in erecting an hospital, to have the clinical wards both more spacious and more lofty in proportion to the number of patients which they are to contain, than the common apartments, into which it may be supposed that students rarely come, and where the visits are performed with greater dispatch. In a clinical ward, room ought to be left around each bed, for the accommodation of the students, and as they are to remain three or four minutes, at least, by every bed-side, there ought to be no chance of the atmosphere of the ward becoming quickly deteriorated.

In these two particulars, the number of patients, and the comparative size of the wards, the medical clinic of Vienna perfectly corresponds with the above ideas; but in another respect it struck us as being extremely defective, namely, in the want of small separate rooms for patients labouring under contagious diseases, for phrenitic, maniacal, and hydrophobic patients, for young children, and for venereal cases.

The number of beds in each ward is twelve. Over each bed is hung a black board, on which are written in Latin, the name, age, country, and profession of the patient, the name and duration of the disease, the remedies in use, and the name of the *candidatus assistens* or pupil who has the particular charge of the patient. A painted ticket, hung up along with this board, indicates the diet of the patient, by the words *weak portion*, *quarter-portion*, *third portion*, *half-portion*, *whole portion*, terms corresponding with those of the fixed diet-table of the hospital, which is suspended in all the wards. It seems to be as necessary to teach the regulation of a patient's diet in a clinic, as to teach the powers of drugs. Yet we have seen hospitals where no such thing as a diet-table existed; or if it did exist, it was at least never submitted to the examination of the students; and we have observed, that it was in regulating the diet of their patients, that young practitioners, issuing from such a school, were ever most at a loss.

The number of patients treated in this clinic, during the school year, is above 200. In 1807-8, the number was 226; in 1808-9, 269. They are chosen out of a thousand patients; and the selection made by Professor Von Hildenbrand, as well as his whole manner of conducting the clinic, seemed highly judicious. He did not search for extraordinary cases, seldom ventured upon new experiments, and despised to raise the wonder of the unexperienced by a show of boldness or of novelty. It was the great object of his instructions to make known to his pupils what is already approved and certain in the healing art, and to teach them the method of observing, examining, and treating, every kind of internal disease. He chose from among the numerous patients who daily entered the hospital, some acute cases, and some chronic, some common, and occasionally, some which were rare; but his choice never seemed to be made with the view of putting to the test any whim of the day, nor of flattering the passion of the young for remedies, and even for diseases, which are supposed to be newly discovered. Puerperal women, patients with syphilis, and children, were occasionally admitted.

When we visited the medical clinic in Dresden, we were surprised to hear from the learned Professor Kreisig, that he admitted scarcely any other than chronic and extraordinary cases, leaving the students to gather their knowledge of the acute and more frequent diseases, from any opportunities which they might enjoy of witnessing private practice. We have also understood that some clinical schools of medicine are occupied in little else than new experiments. Both these plans appear to us very inferior in utility to that of the clinical school of Vienna. "In schola medico-practica morbi populares et vulgares prae aliis pertractantur. Quotidianos enim, semper et ubique obvios morbos quam optime cognovisse oportet."

The visit in the medical clinic is from eight to nine in the morning. The assistant, who is a graduate, and is styled *Sekundar-Arzt*, regularly follows the visit, and along with those students who choose to attend, visits again in the evening. We have already remarked that no one can take the degree of doctor in medicine in the University of Vienna, without having attended this clinic for two years, and treated under the eye of the professor, two patients within the half year preceding his offering himself for examination. This is absolutely required. but we would suppose that each student has the opportunity of treating five or six patients at the least, each year of his attendance. The number of students at the

beginning of November last was about sixty, including foreigners.

The duties of the *candidati assistentes* or students who have the care of patients, consist in examining the particular patient committed to their care, publicly on his admission, and again at every visit; in writing out a *historia morbi;* and in keeping a careful journal of the symptoms and treatment. These cases are never written in a short and imperfect manner: they are not made up of mere hasty notes of symptoms, strung together without order: they contain a faithful and minute account of the state of the patient, at the last morning visit, at noon, and at evening, with observations, and even occasionally short arguments in regard to the diagnosis, prognosis, and treatment. Each report is dated both by the day of the month, and by the duration of the disease: they are written in Latin, are publicly read at the bed-side, and on the dismission of the patient, are delivered to the professor.

On the patients admitted at the opening of the clinic in November last, we had the pleasure to hear Professor Von Hildenbrand illustrate with great precision and detail his manner of examining a patient. We have never seen a more calm and unprejudiced observer of morbid phenomena, nor one more careful and acute. To use his own words, his examinations were conducted " adcuratè, pensiculatè, et patienter." The *candidatus assistens* inquired into the symptoms, was asked what he considered the disease to be, what treatment he would pursue, under what formulæ he would prescribe, and what prognosis he would dare to pronounce. All this was done by Professor Von Hildenbrand, in a manner equally remote from betraying any desire to catch his scholar in an error, or to smother those flashes which occasionally fly from genius under whatever circumstances; and on the other hand, from that indifference and stupid condescension, which leads the pupils of some teachers, first of all to familiarity, and then to contempt. He was at much pains in shewing to his pupils the proper positions in which patients ought to be placed whilst they examined them; in explaining the order in which their questions ought to be put, and the manner in which the state of the internal parts of the body was to be ascertained by viewing and feeling the external. Avoiding all vague conjectures, he taught them that it was purely to what offered itself to the senses that they should attend, in examining the symptoms of a disease. In exploring the different parts of the body and the state of the functions, he preferred an anatomical to a physiological order. He began with

the head, descended to the thorax and abdomen, passed to the extremities, to the surface of the body, and to the excretions; and he somewhat quaintly remarked, that this was an order pointed out by nature. "Pro diversa nobilitate, viscera in diversa altitudine locavit." His work entitled "Initia Institutionum Clinicarum," contains exact rules for the guidance of his pupils in their examinations of patients; in determining the nature, form, stage, and degree of diseases; in fixing their names, treatment, and prognosis; and in writing the history of the cases. It has, perhaps, too much of a scholastic air to be all at once relished by common English readers; but we have met with no work which could better serve as a guide both for clinical students and for clinical teachers.

Nor did Professor Von Hildenbrand distinguish himself more above all the clinical teachers to whose lessons we have been admitted, by the keen eyed precision with which he regarded the symptoms, causes, treatment, and prognosis of a disease, than by the purity and fluency of the Latin diction in which his observations at the bed-side, as well as his lectures were delivered. The whole of the conversation between the professor, assistant, and candidate, was carried on in Latin. Professor Von Hildenbrand seemed to us to speak Latin better than he did his own language, and though we are more favourable to the Italian and Scottish, than to the German manner of pronouncing Latin, we could sometimes have fancied ourselves in ancient Rome, and that the person whom we heard was not a Galician of the nineteenth century, but Celsus himself.

No formal clinical lecture was given by Professor Von Hildenbrand. His remarks upon the cases were all delivered at the bed-side. This not only saved the tiresome repetitions of which formal clinical lectures are usually more than half made up, but was also more impressive. Besides, when he has the patient before him, the lecturer, though he may mistake, can scarcely dare to misrepresent. The lectures which Professor Von Hildenbrand delivered daily from nine to ten, formed a systematical course upon the practice of medicine, and were given by him, not as clinical professor, but as professor of the practice of medicine in the university. We cannot but remark the very respectful behaviour of the students towards this celebrated teacher. When he entered the *auditorium* every person rose, and as he passed up to the cathedra, he received the most profound marks of respect. At the conclusion of the lecture, the same ceremonies were repeated, and none dared to leave the room before Von Hildenbrand. All this was done

every day; but the manner in which it was done, proved how much the respect of the auditors was heartfelt, and how distant these ceremonies were from cold or hated formalities.

Professor Von Hildenbrand might be regarded as an Agathaeus Spartanus. He was known over all Germany, a country which is but too much overrun with hypothesis, and all the other offspring of a futile philosophy, as being one of the ablest supporters of an eclectic school, in which the doctrines of rational medicine were combined with those of empirical. That he was in a word, a rational empiric, appeared at once from his clinical practice, from his prelections, and from his writings. Hypothesis formed a frequent topic of his keen animadversion, and was even the subject of our introductory conversation with him. "Melior omnino nulla foret, quam hypothetica medicina, phantastica et futilis, tot hominum sacrificiis cruenta."

His frequent mention of the serous and mucous membranes, as of great importance in the explanation of morbid phenomena, and his opinion that dietetic means of cure are of greater value than pharmaceutical, were apt to recal the nosological and therapeutical principles of Pinel. To what are styled active methods of treatment, Professor Von Hildenbrand was not favourable, and having but small faith in the alleged power of drugs, he in general adopted and recommended simple, mild, and indirect means of relieving and assisting nature. It seemed to be the observing spirit of Hippocrates, enlightened by all that physiology and pathology have discovered since the days of the father of medicine, which shone forth in Von Hildenbrand, guiding him in his inquiries, and leading him to watch the most minute changes which nature herself effects in diseases, but without blinding him to the agency of any really useful remedy.

We can scarcely conceive any improvement which could be made in the clinical education of physicians at Vienna. The system seemed to us to be perfect. A stage for dramatic and affected exhibitions, or for hazardous and ill-directed experiments, is the idea which is apt to rise in the mind upon mention of a clinic. But in that of Vienna, both the physician and the pupils, seemed to do every thing as they would have done in private practice. It seemed as if the students were led by Von Hildenbrand into the private houses of the patients, and as if the pupils were not learning a lesson in an hospital, but beginning to practice for themselves, with the advantage of having an experienced and able practitioner with whom they might consult. The graduates of Vienna have not

idled away the season for practical improvement. Placed in a situation suited as well for the communication of knowledge, as for the elicitation of talent, they are schooled in penetration, and in actual habits of observation, and bring into the chambers of the sick, something more than book-learning, something widely different from fashionable accomplishments."

(To be continued.)

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*An Inquiry into the Influence of situation on Pulmonary Consumption, &c. &c. by John G. Mansford, Member of the Royal College of Surgeons of London.*—London, Longman? 1818. pp. 135.

(From the London Quarterly Journal of Foreign Medicine and Surgery.)

CONSUMPTION seems more than ever to be committing its heart-rending ravages in this country. The continent of Europe is open to the invalid. Ought he to rest contented with the favourite places of resort in our own Island? Is it worth his while to migrate to a southern clime; or are we, with Smollet, to regard the practice "as a senseless custom, which yearly costs England many lives?" If it be deemed expedient that he should resort to milder skies, whither is he to repair? If we may judge from our own experience, there is not at this moment, in the whole range of practice, a subject which more divides medical opinion, and perplexes the physician, while it gives rise to the never-ending uneasiness of many an anxious relative.

We have frequently wondered that nothing satisfactory has been forthcoming to relieve this perplexity, and remove the degree of opprobrium which is apt to be attached to it. English physicians have, in many instances, become resident, of late years, in the large cities of favourite resort abroad. Their talents and acquirements have been such as should have enabled them to deduce legitimate and important conclusions from the facts which came under their observation. Many English medical men have been travelling for their improvement into every quarter of the globe, and accompanying the invalid in every direction, and yet we are not aware that any new facts or deductions on the subject have lately appeared. We have imagined that the explanation of this circumstance was to be found in the many difficulties with which the inquiry abounds. These we need not stop to consider. They seem, however, to act so strongly, as to prevent the individuals al-

luded to, from furnishing the light which their opportunities must have afforded them, and which our necessities imperiously require.

How many mistakes are we daily called to witness? How comes it that a learned professor, an ornament alike to the university and metropolis to which he belongs, should, within these few months, have informed his patients, that he knew no milder, nor more sheltered spot than Aix in Provence; a city so completely exposed, that its climate appeared to some invalids even colder than the blast on the northern hills? And whence is it that another physician, of no little eminence, should, on a similar occasion, have said, that he had heard objections against every place except Marseilles; a spot where consumption is known to be hardly less fatal than in our own country?

These are glaring, and unfortunately, not very uncommon mistakes; nor are they confined to this country. We have observed no less striking ones among our neighbours. And what shall we say is the proper measure of the uneasiness that is in this way produced? What can be more distressing than that an individual should leave the bosom of his family, or than a whole family even should leave the numberless comforts comprized under the endearing name of home, and on reaching the place of destination—after a long and painful journey—find themselves under less favourable circumstances, than if they had continued in their own country—and see the disease only preying with new violence on the enfeebled frame of the patient.

Not less impressed than others with the difficulties that present themselves on this subject, and incompetent as we feel to do it complete justice, we are still anxious to excite attention towards it. And if, in so doing, we betray our own deficiencies, we would only make this an additional argument for urging those who are favourably situated, to use every effort in the promotion of an object so desirable, as that of giving to medical opinion upon the present question, something of correctness and uniformity.

In attempting to form a judgment of the effect likely to be produced by the migration of the consumptive to more favoured regions, the first point for consideration that suggests itself, is the effect of climate in producing phthisis. That consumption is owing to the badness of our climate is an opinion entertained by every one. But is there not room to question whether we attach clear ideas to this notion. Few or no attempts have been made to discover what constitutes the un-

healthiness of these regions; to analyse the destructive agent; to separate it into its component parts; to arrange these; to assign to them their different powers, and describe their modes of action. And yet these inquiries lie across the very threshold of our subject. We must know what an agent is, before we can trace its operations: we must be able to trace its operations, before we can reason on the best methods of encountering or of avoiding them.

With this subject that of scrofula is very closely connected. It is frequently maintained that phthisis is not a strumous affection—a proposition so much a play upon words, that we shall not stop to discuss it. It is more commonly imagined that there is such a dependence between the two diseases, that we cannot have phthisis without the previous existence of scrofula. From this opinion, generally correct as it is, important mistakes, as we shall afterwards attempt to show, originate, and are now extensively prevalent. It is of tubercular phthisis we speak: and there can be no doubt that it and scrofula are most closely connected. That these diseases are nearly unknown in tropical climates, is a fact deduced from careful observation. That they are equally unknown in the arctic regions, is established on the same satisfactory evidence. Their principal ravages are committed, so far as Europe is concerned, between the 45th and 55th degrees of northern latitude. Within these parallels, we are all liable to their invasions: we are not afraid to advance further and assert, that we all, though in somewhat different degrees, labour under their influence. To return then to our inquiry, we ask, how is this mischief produced? This question presents a field so little trod, that we hesitate to engage in its investigation; so extensive, that we cannot hope to compass it within the limits prescribed to us. It is however so important, that it would be improper to omit it.

In proceeding, we must institute a comparison between the climate of those regions in which the disease is unknown, and that of those in which it is prevalent; and attempt to detct the differences which subsist between them. This end will, perhaps, be best obtained by attending to the circumstances which modify climate in every situation—to these elements which are every where found to produce it. To this investigation then we will immediately proceed.

*Temperature* is, of all others, the agent that deserves the fullest consideration. We need hardly remark that the sun is the great source of heat. The supply thus derived, however,

never remains an instant the same in any part of the earth. It varies from noon to midnight, and from summer to winter.

It might be imagined that in this investigation we ought to avail ourselves of the facts presented by medical topography. This branch of our science, however, is quite in its infancy, and has to encounter almost innumerable difficulties. So limited is the stock of information it furnishes, and so great our distrust of that little, that we do not find that we can avail ourselves of any of the conclusions it affords. We prefer having recourse to an empirical law for discovering mean temperature; first, we believe, pointed out by the celebrated astronomer, Professor Mayer, of Gottengen, and which, corrected by the acute and eminently scientific Professor Leslie, most harmoniously connects the various results of meteorological observations made at distant points on the surface of the globe. In a late very interesting Essay, the Professor has constructed a table, exhibiting the mean temperature of every degree of latitude, on principles, for an account of which we must refer to the work quoted below.* It has reference to places on the level of the sea. From this paper we learn, that there is scarcely any variation in the mean temperature between the tropics, or in the arctic regions; it amounts to only 8°. Fahrenheit: whereas, in either temperate zone, it amounts to 36°. In the part of the globe in which Europe lies, the variation is most considerable. There is a diminution of nearly one degree mean temperature, for every degree we proceed northwards. This, it will be perceived, is a very easy method by which to arrive at the mean temperature of a place. We have merely to ascertain its latitude, and then, looking on our table, the mean temperature is before us. Thus, to take Cadiz, London, and Petersburgh for an example, consult the map for the latitudes; then, the table for the different degrees of latitude; and 65, 52, & 45, are given respectively for the mean temperatures; results corresponding, we believe, with those derived from long and careful observations.

This method, however correct, furnishes only a small portion of the information required. Many lesser circumstances influence temperature in the same latitude; and the effect of these must be measured. Among them the height of the situation—its relation to the parts in the neighbourhood—the prevailing winds—its exposure to these—its proximity to the sea—its being a damp and variable situation—or the contrary—are the most important.

* Supplement to Encyclop. Britt.—If we remember rightly, the same principles are laid down in a note, in the Professor's "Elements of Geometry, 1812."

The consideration of altitude of situation introduces the subject of *atmosphere*. The powerful effect of elevation of situation has long been known. Mount Etna, says an elegant traveller, may be divided into three distinct regions—the fertile, the woody, and the barren. These are as distinct in climate as the three zones of the earth; and might, with propriety, have been styled the torrid, temperate, and frigid zones. The greatest variety of climate, however, on any one range of mountains is to be found among the Cordilleras; for in the space of a few hours may be experienced the greatest intensity of heat, and the greatest severity of cold; while in the ascent, every intermediate variety is quickly observed, and sensibly felt.

Daily suffering from the effects, we have long remained ignorant of the cause of this phenomenon. Astonished at the force and brilliancy of the sun's rays in these elevated regions, we have wondered whither the heat disappeared; and perhaps have been the more surprized, when we reflected that heated air has a tendency to ascend. The phenomenon seems to be satisfactorily explained, by referring it to the law of the capacities of different bodies for caloric. Different aeriform bodies have different capacities; and it is a general property among them, that the power of absorbing heat changes with every change in their density. We need hardly remark, that the increase of the capacity of any body has the same effect as the withdrawing a portion of its sensible heat, and thus every change in the atmosphere to rarefaction must produce cold, and every change to condensation, heat. It is evident, then, that ascending in the atmosphere, as its density is continually diminishing, its capacity for heat must in like manner increase; and while the elevation of heated air has a tendency to spread the heat equally at all altitudes, this new principle absorbing it as fast as it rises, must produce a degree of temperature exactly proportional to the increase of capacity. It is to Professor Leslie again, that we are indebted for these interesting views; and we are happy to add, that they are not more interesting than true. By a set of ingenious experiments, he has been able on a great scale, a priori, to fix with precision the law of the decrease of the temperature in the atmosphere. As it is principles and not particulars which we are now attempting to investigate, we must dwell neither upon the law nor its details. We can merely state that the elevation of 250 feet diminishes the temperature a degree. The results agree most conspicuously with observation, and thus af-

ford the surest evidence of the justness of the principles on which they are founded.

Thus then, to adopt the language of our traveller, we may have a frigid in the torrid zone, and *á fortiori* may have it in the mildest of European countries. But the importance of the fact does not rest here. The relative bearing of any given spot to those elevated regions is another object of scarcely less importance. This ever, and we may add, every where, forces itself upon the attention of those who are seeking for a favored residence. Thus, the place may be situated half way up the northern brow of the cloud-capt hill; it may lie in an extensive plain, exposed to the cold and steady blast from the snowy mountain, or it may be so sheltered at the base of the sunny slope, that the influence of the bold and aerial intruder is never felt. Simple and self-evident as this appears, it is a circumstance which is often overlooked. Its importance, we are persuaded, is not appreciated. We shall therefore dwell on it a moment longer, by offering an illustration. We recall to the recollection of our readers the many examples that may be found in Switzerland; where it has been said you may gather snow in one hand, and flowers in the other. We shall take that afforded by Mount Jura. In a few hours we are transported from the plains of France to Geneva. Poligny, in the former kingdom, lies freely exposed to the north, at the termination of an extensive plain, and is shaded on the south by the stupendous mountain. By the time we arrive at La Russie, we have reached nearly its summit. We see the village lying in a little valley, surrounded with hills of a moderate height, and while we contemplate its snug situation, it would require other proofs than those which the eye affords, to discover that its steeple is placed on higher ground than any other in Europe. In descending southwards, whose imagination is not impressed with the fathomless vallies that present themselves? Some of them we conceive cannot be less than a thousand feet deep, and must have an almost perpendicular parapet of this height rising over them on the north. To the south they are freely exposed. Some of them are inhabited. And how, we would ask, can the northern blast ever reach such spots as these? As it sweeps with a steady current over the summit of the mountain, they must altogether escape. Even when we have descended as far as Gex, we imagine that much shelter must be afforded. Ferney is not, perhaps, beyond its influence. But on our reaching Geneva, we have only to turn to the bold mountain, and we inhale a breeze, the freshness of which at once declares its origin.

We need hardly observe, that this is not a solitary instance. How few spots are there on the far-famed shores of the Mediterranean, that are not exposed to the cold blasts of the Pyrenees, or of the mountains of Grenada; of the Alps or Apennines? These are illustrations of a principle as extensive in its operation as it is severe in its consequences. The point in question involves nearly all that is important in the consideration of the influence of the *winds* in the production of climate. This at least is true, in what are called the temperate regions. Though the great law which the winds obey, their speeding from the poles to the equator, may here be exemplified, yet it is with so many perplexing anomalies that it is hardly possible to say what are the prevailing winds; and even when there is something like uniformity, yet the occasional exposure to the unwelcome visitor we are now alluding to, is more than sufficient to stamp a character on a country.

The importance of *aspect* now becomes apparent. Does the spot receive the first chill blast, or has the current met with many an interruption, and thus arrives with diminished force? Is it screened on the farther side of an opposing hill? Accurate observation constantly manifests that these are not trifles. Montpellier is beautifully situated upon a hill. The town surrounds and covers it: one side, of course, has a northern aspect. On this side too, at no great distance, are high mountains. Its beautiful promenade, La place de Peyrou, can never be forgotten. While from its southern terrace, the eye may behold, in the obscure distance, the Alps, the Pyrenees, and the magnificent waters of the Mediterranean; on the other, its view is quickly closed by the solemn mountains. The physicians and inhabitants are well aware of the difference presented by these spots. It is on the southern side alone that the invalid is permitted to promenade; and where health is in danger, a house is selected, sheltered from the keener blast. A still more striking illustration of the same truth, as mentioned by Dr. Young, has been observed in our own country. It was noted by Dr. Carrick, respecting the influenza of 1803. "It is well known that Richmond terrace is one of the most exposed buildings on Clifton hill. This terrace forms three sides of a parallelogram, fronting respectively the east, south and west: on the east side, not one family, and scarcely an individual, escaped the complaint, while on the south side, the great majority, both of persons and families, in all other respects similarly circumstanced, escaped it entirely." It is not merely in these northern climates that points of this sort are of importance.

The *proximity to the sea* must not be overlooked. This

circumstance contributes much to prevent the extremes of temperature. An island is neither so hot in summer, nor so cold in winter, as a continent. An exemplification of the truth of this proposition is afforded, if we cast our eyes from the continent of Europe to the more extensive one of North America. Lisbon and Philadelphia are nearly on the same parallel of latitude. A fall of snow is regarded as an extraordinary event in the former capital: ice is seen but rarely in a century. The river Delaware, on the contrary, is regularly frozen over every winter. Another illustration is, we are persuaded, very generally afforded to our own countrymen while travelling over the continent of Europe. Even in its southern provinces he often encounters a breeze of a cutting keenness which astonishes him, and which makes a deep impression on his memory. We have heard this remarked by many: we have been able to account for it on no other principle.

The vicinity of the sea also contributes to make a situation damp. We need not go far in proof of this remark. The west is the prevailing wind in this country; and may be said to bring our finest and dryest weather. This, however, is far from true, with regard to our western counties. In these it is known rain more frequently falls than in the others. Saturated with moisture on the Atlantic ocean, the clouds discharge their load as soon as they come into contact with rising ground. In the northern extremity of our island, many, and very striking illustrations are afforded. This dampness serves very much to deteriorate a climate. In ours it seems to be prejudicial both in summer and winter. It renders heat more oppressive, by diminishing perspiration: it makes cold more dangerous, by increasing the conductive power of the air.

We must say a word on sudden *variation of temperature.* It is confined within narrower limits than at first sight might be supposed. That country in which snow never falls can hardly be said to have any winter; and can very rarely have any change which will be very prejudicial to the human frame. We may allow that this exemption occurs about the 45th degree of latitude; in the latitude of Bourdeaux and Genoa. Again, it is no less true, that during many months of the year there is no change of temperature, so soon as we ascend to the 55th degree. With the exception of our own island, Europe north of this lies long embedded in snow. The summer also in these countries, from its very shortness, is infinitely more steady and serene than that which we enjoy. We may be carrying our desire of limitation a little too far, when we attempt to confine the region of rapid alteration to ten degrees.

The changes, however, are here by much the most apparent. They are most marked, too, about the middle of this range, that is, for a few degrees on either side of 50°. Our own country, owing to its insular situation, is one of the most changeable spots of this most changeable district. It is neither steadily hot in summer, nor cold in winter. Its moisture is exceedingly prejudicial. Every change of wind produces a change of weather: and hence it often happens, that in the same day we have a morning of spring, a noon of summer, an evening of autumn, and a night of winter.

In thus attempting to investigate the principles, and to detect the particular circumstances which in every region modify temperature, we feel persuaded we trace the history of the most powerful agent in the production of climate—the great cause of the detrimental effects to which our attention was solicited. A few general principles, if correct, are worth a thousand particular facts. In the delineation there may have been nothing new; we trust, however, it is natural and satisfactory. We shall have frequent occasion to refer to this part of our present article.

We have said that temperature is the most powerful agent. What, it may be asked, are the others? The author whose name we have prefixed to this article, argues for the introduction of a new one. His work consists of two parts. The former is an inquiry into the influence of climate on consumption; the latter, into its influence on the duration of life. The former is occupied in establishing that *diminished atmospheric pressure*, or, in other words, living in elevated situations, is a powerful cause in producing and aggravating the disease. The idea is founded on the fact, that in phthisis there is an accelerated systematic and pulmonic circulation of blood; and that elevation of situation increases this acceleration. The arguments by which this opinion is enforced are exceedingly scanty. Some support is supposed to be derived from the sensations of aeronauts; and also from the effects produced on animals when placed under the bell of an air-pump. The most direct argument, however, is drawn from experiments made by the author on himself. An elevation of five hundred feet diminishes the atmospheric pressure one-sixtieth. The author found that this elevation quickened his pulse five or six beats in the minute; and he thinks he may venture to assert that this is something like an approx mation to the truth.

This is the sum of his *a priori* reasoning: and we need hardly say it is as unsatisfactory as it is scanty. The author

informs us that he lives in a spot, perhaps the happiest in the island for determining the point. Why did he not tell us, that the average pulse in the more elevated situations (800 feet above the level of the sea) was 80 instead of 72? We may judge how "like an approximation to the truth" his conclusion is, by deducing from it, that the pulse of the inhabitants of Quito (10,000 feet above the level of the sea) beats at the very moderate rate of 200 in a minute! We need not tell our scientific readers that this calculation is made on far too low a scale.* It, however, very well shows the probable accuracy of the proposition. We have resided at an elevation of 2000 feet; and have felt the pulse in health and disease; and it never appeared to us different from what we had found it in the fens of Cambridgeshire.

As additional proof, the author informs us that he had found the pulse quickened in several of his patients on the sudden decrease of the height of the atmosphere. And, finally, he tells us, that consumption is more common in elevated than in low stations. The truth of this statement we will not at present examine: but we have no hesitation in saying, that the author is far indeed from making it appear that it is owing to diminished atmospheric pressure. The common explanation of the alledged fact is, that in such situations there is more cold and variation of temperature than in others. We shall give only a fair specimen of the author's mode of discussing these difficult points, if we exhibit the reasoning by which he imagines he overturns the prevailing opinion. Carlisle is situated in latitude 55°; Leigh (we suppose) in 51°. Carlisle is nearly on the level of the sea; Leigh is 700 feet above it: Carlisle, then, is the colder situation. Dr. Heytham, however, gives the mortality from phthisis in Carlisle at a proportion lower than what the author found it at Leigh,—and therefore the common opinion is erroneous! This requires no comment. The question might be quickly determined by discovering the average pulse at different elevations. Till thus ascertained, it is almost useless to conjecture. As matters now stand, we are inclined to allow that this principle ought to receive a place among the agents which operate in deteriorating climate. Even were the principle correct, counter-agents should be taken into consideration. If decrease of pressure expands the fluids, and quickens the pulse, the cold, which on less satisfactory grounds is ascertained to increase in proportion

* A reference to any Elementary Treatise on Pneumatics will demonstrate this.

to this diminution, would probably more than counterbalance the effect.

We have seen it hinted, that *atmospherical impregnations* ought not to be overlooked. The effect of these is prejudicial in manufactories and work-shops, and probably in large and crowded cities; but we should doubt its agency in acting in less confined limits;—in deteriorating climate. *Electrical changes* have also been spoken of. We have seen no reason to suppose that they have any influence in the production of phthisis.

Hence, then, so far as is now known, temperature, varied by numerous circumstances, appears to be the one great agent whose action we can detect in modifying climate. We have seen that it is regulated by certain great principles in every region of the globe, and affected by many minute, but not less important particulars in every latitude and station. We have only to add further, that we are not to measure its influence by its positive intensity, but by the exposure of the frame to its power. We are not to wonder if the Laplander, encased in his skins and furs, and leaving for himself hardly an aperture by which to breathe, or the Kamtschadalen, nearly buried and stewed in his subterranean jourt, does not suffer. These individuals have happily no choice. They must effectually guard themselves against the influence of their climate, and hence they do not suffer from it. It is in latitudes where the effects are less striking, that the greatest injury is experienced. In warm climates every effort is made to guard against heat. It is in the regions between these extremes that the principal mischief is produced. When heat and cold alternate, it is difficult to catch the happy mean. We have pointed out the reasons why this country is, of all the kingdoms of Europe, the most liable to those sudden variations of temperature which are so trying to the frame: and hence we can explain why in it, we should find the prejudicial effects of climate, most marked and most fatal.

In thus attributing so much to temperature, to climate, we do not forget that causes of another nature have much influence. We here particularly allude to air and exercise, food and clothing, &c. &c. But an accurate consideration of the operation of these causes, will serve only to increase our conceptions of the commanding sway which this mighty agent exerts. We will, at once, exhibit our sense of the great effect which these lesser circumstances produce, by quoting a case which made a strong impression on our minds, and which is

even conspicuous on the records of history. It is well known that the children of Louis XVIth were shut up with their father in close confinement, towards the termination of that monarch's reign. His son, afterwards Louis XVIIth, is represented as being a remarkably fine, strong, healthy boy, on his entering the Temple. He was at this time about seven years of age. His confinement was sufficiently barbarous during the life time of his royal father. It was afterwards rendered more inhuman; and still more so after the execution of his mother. He was deprived of all his companions, friends, and amusements. He was shut up in the narrow confines of a grated prison: never suffered to breathe the fresh air, nor to exercise in an open space. He was badly cloathed, worse fed, kept abominably dirty, buffeted and beaten—in short, he suffered what has been justly designated a gradual assassination. The effects of such treatment may be probably conjectured; no case, however, could afford a better specimen of them. How different the frame from that which entered the Temple! In the procès verbal, by M. M. Dumangin and Pelletan, we are told, that the body exhibited great emaciation, marasmus and distended abdomen. The knee and elbow joint presented large tumours containing pus. The lungs were diseased, and adhering to the chest, diaphragm, and pericardium. The intestines had long been in a state of chronic inflammation, and the different folds adhered to each other. Pus was found in the abdomen; and the intestines and mesentery were thickly studded with tubercles.*

Causes of the nature which operated in this melancholy case are, alas! but too common in civilized society. In some they operate more powerfully than in others, and these are found to be the individuals in whom there is most hereditary taint. Let us extend this allowance a little further, and we shall find the true meaning of this so dreaded term. Compare the effects produced at the 50th and 20th degrees of latitude. The unfortunate combinations of circumstances we have alluded to, are assuredly not less frequent in Constantinople and Pekin, than they are in Edinburgh and London; and yet it is not to be questioned that there is not one case of the disease in the former capitals for five hundred which are to be found in every part of this country. To what then, we would ask, is this owing? There is only one answer,—to climate—to temperature.

It will not be necessary to say much on the *mode* in which

* See Lemaire Histoire de la Revolution, tom. p. 510.

this agent acts. Much effect is undoubtedly produced by the *direct application* of cold to the lungs themselves. We may justly suppose that this effect is not unlike that produced on the surface of the body. A sudden transition being made from heat to cold, the vessels must contract and shrink. After a time, however under any circumstances, and still more if a change be again made from cold to heat, they will re-act. Increased action, to an extent differing in different individuals, and leading perhaps to inflammatory action, will be the consequence.

This however is not its only, nor perhaps its principal mode of action. This we imagaine is to be found in the effects it produces in a *secondary way on the lungs, by operating immediately upon the skin.* An able and ingenious author, who deserves well of his profession, and who is known too generally to require to be named in this place, has lately characterized the process under the term cutaneo-pulmonic sympathy. It is, however, to another writer of the present day, and whose works we ever read with equal pleasure and profit,* that we are chiefly indebted for a highly useful exposition of this important principle. Its explanation is not yet perhaps altogether satisfactory. Much must be owing to the effect produced on the circulation of the blood. The skin being freely exposed to cold, the surface contracts: the general circulation is impeded: the pulmonic therefore must be loaded, even to a greater extent than that of the other internal organs. This must always be attended with diseased action; and this ever involves the hazard of producing diseased structure. Another mode in which this detrimental process may be effected is not less apparent. The two organs have a common and a transferable function. When the excretions by the skin are copious, the lungs are free; when they are scanty, the lungs are oppressed. In this state there is undoubtedly congestion and increased action of the excreting vessels of the lungs. Here then are two modes in which it cannot be questioned that cold acts upon these organs, through the medium of the skin. It is at present a very common notion that there are others. We hear of sympathy; of sympathy of vessels, and nervous sympathy. We confess we are surprised to see this phraseology adopted by the authors we have just alluded to. They do not give us a hint of what they mean by it. The certain tendency of this language, in such instances, is to introduce confused ideas. If there be other modes of action than those just enu-

* Dr. Armstrong.

merated, which we cannot detect, why not own our ignorance? why attempt to satisfy the mind with a vague conception? We see no phenomenon which may not be accounted for in the plain manner to which we have resorted; and if so, the other terms ought not to be adopted. Hence then, cold, by acting directly on the lungs, indirectly through the skin, produces contraction in the minute vessels of the lungs, congestion, irritability, and increased action, states which very readily account for the beginning and progress of tubercles and phthisis.

Truth is ever gratifying to an ingenuous mind. It is always, however, of much more importance to be acquainted with the *laws* which an agent observes in its operation, than with the exact manner in which this operation is accomplished. So it is in the present instance: and we may now remark, it was in allusion to the ideas entertained with respect to the operation of those laws, that, in a former page, we ventured to assert that much erroneous opinion existed. The foregoing enquiry was founded on the prevalence—on the accuracy of the opinion, that climate is the great cause of scrofula and phthisis. It was before allowed that those two diseases are most closely connected with each other. But it is, moreover, almost universally believed that climate is tardy in its operation; that its effects are produced not so much by personal exposure, as through hereditary contamination; not so much in a few years, as in successive ages. It is almost universally believed that scrofula is a necessary precursor of phthisis; that when the strumous taint is wanting, "none of the common causes of consumption can ever excite, far less produce, the disease." And these conclusions being adopted, it is as universally regarded as a necessary consequence, that nature and art can do but little in preventing and curing this formidable disease.

These opinions are so generally entertained, and so unhesitatingly adopted, that we think it unnecessary to quote any authority to confirm our statement. In denying their accuracy, we do not mean to question that climate has a gradual and an accumulating influence. But we object—strongly object to the narrowness, the exclusiveness of the assertions. We contend, that if phthisis cannot occur without scrofula, that both the one and the other may be quickly produced; not in a long lapse of years, but from a few months exposure to the exciting causes; and in those too, who have no hereditary predisposition. We contend that slight causes, such as are generally considered altogether unequal to the effect, will produce

them. And we, moreover, maintain that nature *does* much in the cure, and that art *might do* much in the prevention of this disease.

These are strong statements, and we may be regarded as visionary for presenting them. Let no one prejudge the question. All must wish the ideas to be correct; and we much deceive ourselves if we cannot produce weighty and satisfactory evidence on the subject.

We have first to show, that these diseases may be quickly excited—in constitutions not hereditarily predisposed—by slight causes. In proof of this we adduce the melancholy case of Louis XVII. already quoted, as a specimen of an host of a similar nature, that could easily be produced. We adduce the well-known fact, that a strumous decline speedily cuts off most of the lower animals we bring from the torrid zone, and attempt to domesticate among us. We adduce the fact, that the inhabitants of tropical regions are little less alarmed at suffering from phthisis when they migrate from home, than the European is of falling a victim on being exposed to the dangers of a burning sun. Nor is this apprehension rested on any other than the surest foundation. Some years ago, three hundred African children, rescued, we believe, from the bonds of slavery, and under the benevolent protection of the best friends of our species, were sent to the metropolis for the benefit of immediate care and education. We have been informed, that during the first year, nothing particular was observed. During the second, they became martyrs to scrofula in every form: and to such a pitch had this extended during the third, that humanity constrained their benefactors to return them to their native shores.

Lately, a very striking illustration of this truth was afforded us, so far south as Gibraltar. An English Regiment of West Indian blacks, about 1,000 strong, had been transported thither. Though they arrived in summer, they to a man complained of cold. Additional clothing was immediately served out. Covered to an extent that would have been burthensome to others, effects more marked than their mere perceptions were quickly visible. Scrofula, in its various forms presented itself. Phthisis became prevalent: and we saw many a poor fellow falling victims to that disease, though treated with all the care, and kindness, and hospitality, for which the Rock is now so deservedly remarkable. The common appearances were found after death. We, moreover, adduce the extensive experience of M. Broussais; he found phthisis very common and very fatal among the French troops in Holland. On dissection, the lungs were filled

with tubercles. On removing to Italy, the disease nearly disappeared. He believed that it was excited in the former country, in constitutions not at all predisposed to it, by the cold and variable weather they experienced: and on his removal southward, found that not only was a check given to the further propagation of the disease, but a cure afforded to those in whom it had commenced. Finally, we adduce a similar, and hardly less striking example of the same kind which was afforded during the war, in our navy. We have it on good authority, that phthisis was more prevalent in our fleets, exposed to the vicissitudes of season in a northern climate, than in those which were stationed in milder regions.

That most of the classes of individuals just alluded to would have remained free from disease, had they not been transported to a colder region, can hardly admit of a doubt. We conceive then, that we are not too bold in asserting from the facts, that tubercles may be quickly excited in constitutions, we might be apt to imagine the least liable to them; that important, and even fatal effects may result from a few months residence in a climate which is generally regarded as a mild one; and that decided injury is produced by a somewhat more trying situation, in robust frames, already inured to an inclement sky.

We have next to show, that nature does much in the cure of this disease, an opinion closely connected with the subject we have been considering. If we have at all succeeded in shewing, that too little influence is generally ascribed to external and adventitious circumstances, we have done much. More being allowed to the operation of this class of causes, less will of course be owing to hereditary predisposition. Some of the facts which we have adduced in support of the opinion we have just left, bear no less strongly on the present. This is more particularly true of the conclusions of Broussais. Had we, however, no other evidence on which to rest the opinion, we should have hardly thought it adviseable to advance it. A mass of irresistible evidence, we contend, is every day afforded to the practical anatomist. How very many bodies do we open in which we find either tubercles, or their cicatrices. In turning to our case-book, the first that presents itself is that of an old man of sixty. In this case tubercles were numerous, and in every stage of progress. Before death he had occasional cough; but for many years at least, no regular symptoms of phthisis. Having attended him during his illness, we did not expect to find any morbid structure in the lungs. We have to day opened the body of a patient, who had been for many months under our

observation, without pulmonary symptoms having attracted his or our attention, and yet the lungs were studded with tubercles. But in descending to particulars, we weaken our argument. Is it not true, that in our dissections, we daily meet with cicatrices of tubercles, in people who have died from every variety of disease. Who can tell at what time they were produced, or when they were healed? Were it necessary we could adduce some of the names most venerated in physiological and pathological science, in confirmation of the opinion, that tubercles, in every state, will often, even in this country, dry up and cicatrize. We prefer, however, to refer a point at once so simple, and so important to the observation and reflection of our readers. If then unassisted nature, even in such a climate as this, does so much, what might we not expect from her, were we but to second and promote her endeavours?

Lastly, we proposed to show, that art could do much in the prevention of the disease? But does not this follow as a corollary to what has been said? Surely it is not in this single instance that Nature withholds her aid? Plain facts, almost without reasoning, declare, that the mere mention of consumption ought not to fill our minds with dread. Nature alone frequently cures: why may not nature and art do so too? Still the appalling reflexion of the unheeding progress of the disease, and of its immense mortality, forces itself upon our recollection. Why has phthisis ever been so dreaded ever so fatal! Can we obtain no answer to this important question?

We would here point out, that our expression is, that art might do much in the prevention of the disease. Tubercles generated in numbers, and advanced in progress; the whole substance of the lungs altered in its texture, form a case in which little can be hoped for. Let it not, however, be imagined, that in guarding our expressions, we mean to condescend to little subtleties, or to have recourse to a few disputed cases, the real nature of which was never known. No!—Hitherto we have attempted to take extensive, liberal, candid, views; and if any practical deduction is to be drawn from them, if any real advantage is to be derived from that which follows, it is only to be obtained by proceeding in the same spirit.

We have seen that the region in which phthisis is most common, is that which we have called the cold and changeable region. It is here alone that it cuts off a considerable proportion of the population; and if occasionally it elsewhere manifests itself, our wonder will hardly be excited when we remember how many lesser circumstances make a changeable climate even

in the most fortunate latitudes. We have seen that in this region cold produces the most prejudicial effects; and we have pointed out that the greatest detriment seems to result, in a secondary way to the lungs, from its primary operation on the skin. We before hinted how much Dr. Armstrong had done in elucidating this principle, and we must again refer our readers to his work, for many truly original and interesting details. We think that the injury done in this way is beyond estimation. We have often remarked that a striking feature of the phthisical constitution was a dry and unperspirable skin. Every one must have observed that the disease is most apt to occur in those who are but little protected from the cold. Dr. Armstrong affords us a remarkable illustration of the fact. When at Sunderland, though he practised much among the Society of Friends, he attended only one young woman of that denomination who died of the disease. He ascribes the comparative exemption to the great attention paid among them to clothing.

We would here then put this simple question, Do we then in these regions sufficiently defend ourselves from the inclemency of the weather? Does the prevalence of consumption depend on ourselves? In answer to the former query, we appeal to our individual sensations, to our daily observation. How universally, for six months in the year, do we meet a shivering population crowding along our streets. In the northern regions of Europe the inhabitants effectually guard themselves against the inclemency of the season. The degree of cold we experience is much greater than that felt on the shores of the Mediterranean, and yet we have little hesitation in stating, from our own observation, that in the latter situation the inhabitants shun its influence with much more scrupulous care, than we do. Frequently, for months together, the sky is cloudless, and the heat is intense. Rain is desired for the benefit of the country, and freshening breezes for universal gratification. But no sooner is a change anticipated, than all are on the watch. No sooner do they feel what they regard as cold weather, than infinitely more care is taken than we ever think of. These facts have often forced themselves upon our notice. In Dauphigny, Languedoc, and Provence, our astonishment was greatly excited by seeing the inhabitants clad, as we expressed it at the moment, ten times more warmly than the people in England. This was at a time when flowers were in full bloom; in a country where the orange-tree, the olive, and the pomegranate flourish. We repeat it, in these countries, the inhabitants were infinitely more warmly clad than we are. The difference in the dress of the women struck us most. Head and feet from top to toe,

they were dressed in a way more fitted to guard against vicissitudes of the weather, than any class of females we have seen in this country. Were the climates the same, this might appear sufficiently remarkable: but it is still more so when we reflect on the immense difference between them. We happened occasionally to meet some of our countrywomen. It was winter, and they had adopted their English winter habiliments. In the eyes of the females of the country these appeared quite insufficient for winter apparel. If insufficient for the mildest province in the south of France, could they suffice for England? In the provinces of which we are speaking, the inhabitants appeared to be much more apprehensive of exposure to rain than we are. The scrupulous attention they paid to their umbrellas amused us. Nor would we confine these remarks to the dresses of the females. We would almost venture to say that in the south of Spain, whenever there is the least call for it, the inhabitants, *en masse*, possess as decided a superiority over us. There is in this country no garment which affords the protection given us by the Spanish cloak.

It will be observed that these remarks refer to the whole population, but more especially to the sober, wealthy, and well-doing. What shall we say, then, of the unhappy children of poverty, and of the thoughtless votaries of fashionable folly. There are few countries in which poverty exhibits itself in such distressing aspects as in England. This perhaps, is owing to our being so much a commercial people. We are peculiarly wanting in that sage philosophy which makes a man contented with the lot of his forefathers, with easy, happy obscurity. We must all be great, all wealthy. This leads even the lowest to speculation, and too frequently to ruin. Even our vices are more generally spread than in other countries; and these, too, lead to poverty. We think there is a greater proportion of our population half covered with rags than in other countries. But there is no necessity for pushing the argument thus far. Allow that we have only our regular share, and the question again recurs, Is it not infinitely more injurious than in other climates? So it is with our silly fashions. Even if we did not, in this country, more frequently than in others, meet with flimsy and transparent dresses, with one less comfortable in the evening than in the morning, with more sudden transitions from heated rooms to freezing avenues and splashy streets, yet the effects must be more prejudicial here than elsewhere.

The effects of all this cannot be easily calculated. And is

there any propriety in our so unscrupulously taxing our climate with the mischief, while we will not use even moderate means of defence? It is common for the profession to accuse the obstinacy of their patients, and the tyranny of fashion. But the blame rests not with our patients, nor with the fashions. It rests with ourselves. We appeal to the man in practice. Does he ever find the propriety of his advice disputed? If he be earnest, does it ever meet with a refusal? The mischief lies in this, that there is no uniformity of opinion among medical men. One is ever dwelling on the propriety of making ourselves, and especially our children, hardy: exposing them in all weathers, at all hazards. And when our patients, and the public see such diversity of opinion, who can wonder that each chooses for himself? Let medical men be only agreed and decided in their opinion, and speedily folly and fashion will alike cease their opposition, and thousands and tens of thousands will be saved to their friends and to their country.

It will not be here imagined that we wish to introduce effeminacy. We have through life to combat with the surrounding elements. We had lately a patient who was confined for years in a chamber, the temperature of which was regulated with uncommon care. But so susceptible had he become, that every current of air in the room would injure him. Wherever his clothing protected him he escaped: but rheumatism attacked his scalp. On this being defended, his eye, his throat became the seat of inflammation: even the periosteum of the bones of the face became inflamed, and the salivary glands themselves did not escape. The frame must be exposed; but when exposed, defended. This is particularly necessary for the young. Scrofula would be then much less frequent among us. Hereditary taint itself would not excite the disease. This is not the place to enter into the minutiæ of dress; but perhaps none of us are sufficiently clothed.* There ought also to be greater uniformity in our dress throughout the day, and the year. Thus accoutred, fresh air is our most important food; daily active exercise our most important duty.

This, then, is a plain unvarnished tale; containing perhaps more of what is true, than of what is new. It recommends itself, we are persuaded, to the sense of every reader; and we feel convinced, that were its statements believed and acted upon, it would soon be found that art could do much in the prevention of the disease. As a proof of this, we adduce the

* "Females should wear a chemise and drawers of flannel or fleecy hosiery, with warmer stockings, and much stronger shoes than are used at present."—*Armstrong on Scarlet Fever, Measles, Consumptions,* &c. &c.

testimony afforded by Dr. Cogan. The Dutch, it is well known, are more exempt from the disease than the English, French, or Germans. Their country is both cold and damp; but they keep themselves warm. "The Dutch," says Dr. C., "are forcibly struck with the coughs so universally prevalent in England, at every season of the year. At church, and at the theatre, devotion and pleasure are interrupted; while in the largest assembly in Holland, instances of a similar kind are hardly known. This very striking contrast I have been induced to ascribe to the differences in the construction of houses, and to the peculiarities of dress."*

The preceding investigations concerning climate, and the circumstances which modify it; concerning the manner of its action, and the laws which regulate it, have occupied us long. They have, however, we trust, put us in a condition readily and accurately to answer the great question undertaken in this paper, Is it adviseable for the consumptive to resort to milder skies?

The pecuniary resources of our patient can never be overlooked. Warm clothing has been represented as the great prophylactic measure to which all should have recourse. If the symptoms of the disease threaten, this is of course the first point that claims attention: and to the poor, so far as climate is concerned, this, with the insuring a perspirable state of the skin, is all the direction we can give. We do not apprehend that much advantage is to be derived from regulated temperature within our dwellings; none especially at an early stage. The practice of shutting up an individual in one apartment is inconsistent with good air and regular exercise; and whenever a patient is deprived of these, he loses much of his comfort, and of his chance of recovery. If in easy circumstances, and resident in the northern parts of our island, he ought to betake himself to its southern shores, particularly in the more changeable season of the year. Mr. Mansford has attempted to show that proximity to the sea deteriorates a climate. He must, however, pardon us, if we say that he has failed to produce conviction in our minds. The melioration of climate in many of the favourite places of resort, on our southern coasts, is undoubtedly great.

But the lowness of the temperature, the variableness of the weather, and the great humidity, must ever be great objections against this island. From the principles before laid down, we might safely conclude that we should find a mean temperature,

* Beddoes on Consumption, p. 75.

ten or twelve degrees higher in the south of Europe. Some of our readers may tell us that this argument is built on speculative principles. By a reference, however, to tables in our possession, we can state, what is hardly necessary, that it is decidedly true. Nay, all the advantages to be derived in some of the places most favourably situated is not thus expressed. What an advantage must it be, never to have frost or snow during the course of a winter, never to have the thermometer under 40°!

This, however, is only one of the benefits to be derived from a southern climate. So long as the case is doubtful, and even to the last stages of the disease it is a matter of great importance that the patient should be able daily to taste the refreshing breeze; or, to speak in strict allusion, the balmy zephyr. When the climate is humid, this cannot be done. We have now before us a table kept with great exactness in Italy, during part of the years 1817-18. In this it appears that for more than a hundred days, during the very depth of winter, there were only eighteen in which any rain fell: and we give it as a fact which may be relied on, that during that period, five days did not occur, in which, on this account, it would have been unsafe for the most delicate invalid to have ventured abroad,—if he had been ordered to take exercise three times a day, there were not five days in which he could not have minutely complied with the advice. Can we think this a trifling advantage? And, even yet, it is far from all. Ours is a gloomy climate: often for days and weeks together, how dreary, how melancholy! Not so with Italy. It is almost true, that there the sun ever shines—the sky is ever cloudless. All is calm, serene, and cheering. There is a lightness and elasticity in the air, which is truly delightful—a brilliancy and splendour in the heavens, which is most exhilarating. All nature rejoices under the happiest influences. The spring is ever present—the flowers are ever blooming—the fruits are ever ripening. And has all this no influence on the languid frame? The natural gaiety of the inhabitants declares the effect. Its power over the mind of the stranger is still greater.

Such considerations as these excite our astonishment, that there ever has been, among medical men, a doubt concerning the propriety of the emigration of those who can afford it. Nevertheless, while most authors give the practice faint praise, many speak hesitatingly on the subject. Most practitioners are still doubtful and undecided: they allow their patients to go, rather than strongly urge them to it. This arises principally from two causes: the salutary influence of climate over the

disease is first questioned; and then doubts are entertained concerning the superiority of particular climates. Both of these are serious objections, and must now be met.

On the former we refer to much that has already been said. It is generally imagined, that tubercles once formed must, like fungus hæmatodes, cancer, and other malignant tumours, go on to a fatal termination. Many reasons, however, may be offered why this character should not alike be given to these diseases. Few can doubt that tubercles, in many instances, lie dormant for a long series of years: that their advancement may be checked, and new ones may be prevented from being added to the number. Add to this, another important consideration, sufficiently well known, that whatever breaks up a constitution, injures the general health, and induces debility, makes us very liable to the disease. The symptoms once incidentally produced are very apt to be maintained. The presence of a few tubercles is the most powerful predisposing cause of this sort. And if it be true, that cold variable temperature is the great exciting cause, how much a matter of importance must it be to remove a patient thus predisposed from the scene of danger? In a climate where more mischief would not be inflicted, the constitutional powers would rally, the active tubercles would exhaust themselves, and cicatrize; the strength would be recruited, health restored, and the patient, ere long, enabled to encounter a trying atmosphere. "If," says the late Dr. Adams, "your patient does not saunter away his time in England, we can with certainty promise a cure."

But that this result may be obtained, the steps must be taken speedily. It is usual for the consumptive to be kept many months in this country, till every means, and every physician be tried; and time is lost, and the invalid sacrificed. If the winter be approaching, the patient should flee to the most sheltered region he can find. Of the common remedies we say nothing, as they do not come within our plan. The two most important, perhaps, are travelling and sailing. As circumstances or inclination direct, the patient may make his choice.

This leads to the second point we proposed to meet.—Is the climate of foreign countries so superior as has been represented? We allow that there has been ground for making this a question. It has arisen from insufficient attention having been paid to the circumstances which modify climate. We may go south to the line itself, and experience more cold than in England. A great error consists in imagining, that when once in the south of France, or in Italy, we must necessarily find warmth, and favourable climate. Hence it has been made

too mush a matter of indifference what spot should be selected, and disappointment has been the necessary consequence. It is not merely a mild, but an invariably mild residence, which the invalid requires: the elements necessary for the formation of such a one are very numerous, and their coincidence is a very rare occurrence. Though in the founding of cities, salubrity of situation has seldom been made a consideration, yet the habitation of man must be resorted to by the invalid: hence it is there are but few places truly valuable. Had not excellent situations been every where expected; had attention, and a name, been given to those only which deserved it, there would have been less disappointment and doubt upon this head.

We must now take a more particular survey of the places of general resort abroad.

Madeira seems, on very sufficient grounds, to have lost the celebrity it once enjoyed. It is far south, and the mean temperature is high: but it is an island, and a small one, and subject consequently to sudden variations of weather. It also contains some high mountains, the tops of which are generally covered with snow. Hence cold winds, snow, and sleet, are frequent. This sleet falls occasionally on the low grounds. Can we be surprised, then, if phthisis sometimes occurs? If there are no spots sheltered from the currents of the mountains, it must evidently be bad. Dr. Gordon, from being long resident on the island, was well qualified to give an opinion, which, as recorded by Dr. Reid, is peculiarly valuable. He considered the south of France as the superior residence; not, however, because the patients sent out to Madeira did not recover (for they generally arrive too late), but from a conviction of the superiority of the former climate.

Similar observations may be made of Lisbon. It stands on high irregular ground, and has a large river running through it. Both these circumstances are unfavourable. It is also undefended from the breezes of the neighbouring mountains; and cold easterly winds are very common. Snow and ice certainly do not often appear, though they are sometimes witnessed. We have learned, from living authorities, as well as from the testimony of authors, that it is far from being an unexceptionable residence.

In passing to the south of France, we imagine, that we need say but little of Avignon and Aix, of Marseilles and Montpellier. All these are places of considerable resort. They are delightful residences for people in health; but little suited for invalids. "With respect to the south of France," says Dr.

Young, "it is, perhaps, sufficient to remark, that the general proportion of deaths from consumption at Marseilles is fully as great as has been observed in London." We quote this passage that we may point out the erroneous principle on which the remark is made. Relative position must ever be borne in mind; and it might have happened, that within five miles of Marseilles there was a spot where consumption was unknown. The places we have just named are exposed, and often visited by winds from the north. As before hinted, they are severe, and much dreaded. They have received distinct appellations. The coldest coming from the north-east is called Mistral; the other coming from the north-west is denominated Beeze. Wherever the provençal language extends, there, names and characters of the wind are to be found. The former variety was known to the Ancients under the name of Circius. It is a clear, cutting, steady breeze; and, whatever may be the cause of it, we are well persuaded that its effects are as strong and trying as any in our own island. It is these winds that are the great drawback to all this part of the Continent; and situations will be found good or bad, other circumstances being equal, in proportion as they are defended from their assaults. Wherever they are frequently felt with violence, they take from the place all title to be considered as a resort for the phthisical. Some of the French physicians we have met in Paris still recommend these places in preference to others. This must arise from their attention not being frequently called to the subject. They still mention Montpellier, Beziers, or some other place in the neighbourhood. The Montpellier physicians, on the other hand, send all sick visitors from their city. They regard it superior to any other spot in that part of France, but much inferior to other places that may be found.

Similar remarks may be extended to Florence, Rome, and Naples. Though from their more southerly situation, their mere temperature must be considerably higher, yet the necessary circumstances being wanting, they are unadmissible residences. The neighbourhood of the Apennines is here the unhappy circumstance. The mistral is known, in the northern parts of Italy, under the name of Maestro, and often prevails. It may be proper to mention, that the Maestro of Naples is a different wind. We find it here synonymous with the Maestro-Ponente, or Levanto Sirocco. This wind is well known to come from the east, and the deserts of Asia. It frequently prevails all over the Mediterranean: but wherever it occurs, it is always soft and warm, and can never harm the consump-

tive. Snow and ice are no uncommon visitors in the cities just mentioned.

We have as yet said nothing of Pisa and Nice in the north of Italy; nor of Hières, in the south of France. These are the spots to which most invalids now betake themselves; and their real and comparative merit is an interesting enquiry.

"Nice," says Dr. Southey, "is in the neighbourhood of high mountains, and ought therefore to be avoided." This idea, and mode of reasoning, are, at present, very common. They only furnish, however, another proof of the erroneous views which are generally adopted on this subject. Nice is further north than Marseilles; and it is true, that it is not above eight or ten miles from perpetual snows. Marseilles and Aix, on the other hand, are far removed; from them the mountains can hardly be discovered. There is no one, however, who has resided in these several places, but knows the immense difference between them. Whence does this arise? The very circumstance which is generally regarded as the grand objection to Nice, is, in truth, the one to which it owes all its celebrity. It is near mountains, and is sheltered by them. The town is situated in a large and beautiful bay. This bay is surrounded by a noble amphitheatre of stupendous hills, the last of the maritime Alps. The amphitheatre is lofty, extensive, and irregular. The winds in the higher regions are violent. It is recorded of the mistral, that occasionally it sweeps men, cattle, every thing from the roads, and precipitates them into chasms and glens. This happens, however, only near the summit. It is a proof how much the winds are impeded and opposed in their progress. As they approach each succeeding range, they sweep over its brow, but never reach the vallies. The same observations may be made with regard to almost every other place which is mentioned, as a favourable residence. The principal objection to Nice is, that though sheltered, the shelter is not complete. The winds, though mixed with many a current, generated in the vallies of the hills, by the strong rays of the sun, and very different from the pure mistral, are occasionally cold. Hence ice is sometimes seen in the northern exposures. During the months of November and December, 1817, the range of the thermometer extended from 38 to 69 degrees. At no period during the winter did it descend below 38 degrees.

Statements nearly similar may be made of Pisa. This situation is generally compared with the last; and they are commonly allowed nearly equal merits; if there be any difference, Pisa has, perhaps, the preference. During the months of No-

vember and December, 1816, the range of the thermometer extended from 42 to 62 degrees. From these kind of statements, however accurate, little can be learned. Although those which we have produced were made under exactly similar circumstances, yet, as they were made in different years all propriety of comparison is wanting. Pisa is, like Nice, liable to mixed cold winds: an excellent artificial climate, however, may be found for invalids. It is formed by a row of buildings nearly a mile long, extending along the northern bank of the Arno. Here the sun shines all day long; and except when the wind is from the east, cold is never felt. The quay also, between the houses and the river, affords a sheltered and sunny drive or promenade. Nor are artificial sheltered spots wanting at Nice. The principal ornament of the city is the terrace. This is a walk formed on the top of the embankment raised against the inroads of the sea. It extends along the whole south front of the town, which defends it from the north, as Mount Alban no less effectually protects it from the east. It is fully exposed to the glowing south, and has a noble prospect. Some houses may be selected that are never exposed to the north or east wind. At these places, however, it is the *campagne* and not the town, that for good reasons is generally preferred. In making selection of a residence, regard ought to be had to position. It should still be on the sunny side of the hill, and defended as much as possible from the obnoxious blasts. The immediate vicinity of the river, for very evident reasons, should also be avoided.

After objecting to Nice, Dr. Southey recommends Hières. He says nothing of Pisa. The climate of Hières is good. In comparing tables kept at this place in the winter of 1817-18 with others kept at Nice, we found, that so far as temperature was concerned, there is no great difference between them. Hières is more exposed than the two situations last mentioned, and is more liable to be visited by the mistral. A much greater degree of humidity is shewn by the tables to exist at Hières. There was here no rain-gage; but we imagine double the quantity of rain must have fallen. These circumstances depreciate the value of the spot. Indeed, from all that we have heard, we should not put this place on a level with those just alluded to. The opinion of the celebrated M. Thomas, director of the French Academy, seems to have been confirmed by subsequent experience. Writing from Nice to Mad. Necker, he remarks, "Après avoir balancé long temps sur le climat que je préfererois pour mon hiver, j'ai choisi le plus agréable et le

plus doux:" and again, " Voila le sejour que j'habite, il est infinement préférable à celui d'Hyères.

Of Malta, from our own experience, we know nothing. Dr. Young states, that he conceives it not quite so agreeable a residence as Madeira.

With regard to the places, of which we have been last speaking, we may remark, that we are acquainted with a gentleman now in excellent health, who, after losing nearly all his relations in consumption, betook himself to the Mediterranean, and has now for many years been residing on its shores. He has spent a winter in most of the places we have mentioned; and his observation was, that in none of them could you find spots more sheltered than at Nice; in none could you at all times procure such a rich variety of flowers, and abundance of vegetables.

We have as yet said nothing of Spain. The south and south-east are the best parts of it. In a style truly laconic, Dr. Southey remarks: " Valencia is the particular spot I should select in preference to all others." He would have performed a more useful service to the profession, had he favoured us with the grounds of his preference. From what we have heard, though its character be excellent, we should judge it inferior to Pisa and Nice. It is situated in an extensive valley, about sixty miles in compass. In coasting along the shores of Spain, in the month of June, we observed snow-capt mountains on either side of it. Those on the north are at a distance which frequently affects, but does not benefit. The city is not well defended from them. We have heard a very high character from some who have passed a few months in its environs; while, on the other hand, a most respectable servant of the British Government, long familiarly acquainted with it, writes, " I have felt very severe winters in Valencia."

Malaga, we believe, is decidedly a superior spot. It is at no great distance from the Grenada mountains; but it is sheltered. The wind occasionally blows severe; but it is of short continuance. The sun is always powerful; and in its rays the breeze may be either borne or avoided. The inhabitants of Barbary imagine this spot to be the residence of the blest spirits of their fathers. Another invalid, who has long been seeking, and we may add, finding health, and who has resided at most of the places we have passed under review, gives Malaga the preference. He places Malaga first, then Pisa, and then Nice.

But unfortunately, climate is not the only thing to be considered in reference to Spain. The acquaintance of its inhabi-

tants with strangers is limited; their notions are confined and occasionally lead to the most unpleasant incidents. We, on the other hand, are not familiar with their language and customs. Travelling is abominable. It resembles the moving of a caravan. You must furnish yourself with provision, bedding, guards, The inns are miserable, cold, and dirty. At Valencia, a house may be easily obtained: but it is unfurnished, and the comforts to which Englishmen are accustomed cannot easily be procured. Malaga is still more destitute; many even of its inhabitants procuring their luxuries from London and Hamburgh. The chance of being suitably accommodated, in either place, is small.

We believe we only state the sentiments generally entertained by the medical men, who have resided at the places of resort last mentioned, when we say, that they feel well contented and satisfied with the marked superiority of climate. It may not be all that they could wish, but it is very much preferable to our own. Hières, we say, is good; Nice and Pisa still better; and, climate alone considered, Malaga better still.

In directing his patients abroad, the physician ought to take some other circumstances into consideration. Is the invalid to proceed by sea or land? All the places mentioned can, without much difficulty, be reached by sea. If land be preferred, then, to say nothing of Spain, a journey to Pisa is considerably more arduous than one either to Nice or Hières. In going to the first, the high Alps must be crossed by mount Cenis or the Semplon, and that at most seasons of the year not without hazard.

From what has been said, it may be seen, that there is no place now known in Europe which is not occasionally liable to a cooler breeze than we might wish for our patient. We need not mention that objections still stronger exist against countries farther south. In all those of which we have spoken, it is the wind from the mountains that produces the mischief. We feel happy then, in being able to state, that we have yet to speak of another spot, not generally known, but which, we believe, will afford greater shelter than any which has received attention. We allude to Villa Franca, a town at no great distance from Nice; once great and flourishing, but now containing not more than 2000 inhabitants. The harbour is one of the finest in the Mediterranean, and was formerly the great naval arsenal of the king of Sardinia. The bay is one of those graceful sweeps which skirt the shores of the Mediterranean from Hières to the gulph of Genoa. It is properly a bay in the more extensive bay of Nice. It is a very deep one, form-

med by the abrupt termination of the mountains, which project into the sea on either side, and form bold promontories. The town is situated on its western side. It is deserted, poor and miserable. It is to its *Campagne*, therefore, that our remarks apply.

The observations which we have made on the valley of Nice, may be applied to Villa Franca, with this difference, that here every thing is very much in miniature. The amphitheatre is smaller, and infinitely more steep. The last tier of mountains is especially precipitous. Springing abruptly from the shore, they rise, generally, on an angle of about 45 degrees: the houses are built wherever a little flat ledge is left. When elevated one or two hundred feet above the level of the sea, you may not be further from it in horizontal distance. The hills continue to rise above the houses in the same sudden manner. On the west, north, and north-east they attain an elevation of 4 or 5, or even 600 feet. On the east the amphitheatre is less complete; the elevation is not great, and consequently the recess is, on this side, a little exposed. The shelter, however, afforded in the other directions, is all that could be wished. The bay lies directly north and south, and the *Campagne* is freely exposed to the sun. It is not easy in words to convey an idea of this truly singular spot. Its character was happily expressed by one, who said it put him in mind of the depredations committed at the bottom of a plumb-cake, by the thieving mouse. An idea of the completeness of the shelter may be formed from an occurrence which was the result of accident. Wishing to make accurate meteorological observations on the spot, one of the most exposed points in the premises was selected for fixing the vane; but it remained either altogether uninfluenced, or turned solely in one direction. The wind was never felt excepting from the south and south-east. The shipping in the bay afforded an opportunity of judging of the winds. Their streamers never floated, except to breezes from the south and south-east. The bay was always smooth and calm, and never was any thing seen upon its surface beyond a gentle ripple. Hanging gardens adorn the lower ranges of hills with a rich clothing. They are covered with the olive and carrubea, the fig, the almond and the orange tree. The soil is remarkably luxuriant. At a time when the Continent was debarred from foreign intercourse, the sugar cane was here cultivated with success; and had the war continued, the proprietor found it succeed so well, that he intended to continue its growth on a more extensive scale.

This description and detail affords much ground for supposing that the climate must be very superior. The opinion, however, need not rest on doubtful evidence. Accurate tables were kept at this place and at Nice, for the sake of comparison; and it was found, that during the winter months, Villa Franca had an advantage in the average minimum, at the average taken at the coldest times in the twenty-four hours, of six degrees. This difference is immense, but only corresponds with the superiority of natural advantages.

Though the ascent be so precipitous, there is no want of free space for exercise. The inhabitants have cut mule-paths in every direction, at different elevations, extending round the amphitheatre. The invalid may skirt along the sea shore, and listen to its murmurs, with no other screen between, than a hedge of blossoming myrtle. He may make his round at an elevation of 100 feet, and feast his mind with the varied and enchanting prospect. He may mount still higher, and under the shelter of the olive, lose himself in ever new and ever varying paths. He may mount his mule, trust to its safe guidance at every elevation, and promenade at every terrace. He may extend his ride to the great roads in the neighbourhood, or vary his occupation, and spend many a pleasing and health-renewing hour on the calm lake beneath, where the breeze is never felt, and no wave is ever seen. This romantic spot is not unknown on the Continent, as a very superior residence. At Montpellier, a celebrated physician described it to us as the first in Europe. He had derived his information from a Russian Prince, to whom it had been strongly recommended, and whose hopes had not been disappointed. From what we have seen, we should give it a similar character, and a decided preference. Though the town is too poor to furnish comforts, yet every luxury may be abundantly and daily procured from Nice. We know only one objection which would, at present, prevent the situation from becoming a place of great resort. The number of country houses is small, and most of them are not commodious. This, however, is a fault which could soon be remedied; whilst its advantages are lasting, and, we imagine, of the highest order.

An objection is frequently brought against emigrating abroad, from the difficulty of avoiding the great heat of summer. A little investigation would supply a ready remedy for this. The celebrated Bishop Berkeley, in writing to Mr. Pope, mentions, that one of the pleasantest as well as happiest of his summers, was spent in the small island of Inarine, in the bay

of Naples. The air, says he, in the hottest season, is constantly refreshed by cool breezes from the sea.

We have seen the climate of Crete thus described. The climate of Crete is delightful in the highest degree. Its winter of two months resembles the May of England, and the April of Italy. The rest of the year is a continued succession of fine days and brilliant nights. In the day, the sky is cloudless; in the night, a countless profusion of stars, whose astonishing brilliancy is seldom obscured by vapors, renders the season of repose more beautiful than the glories of the day. We need not ask if all this be true. Let us not, however, be satisfied till such a spot be found. Many a patient will need it—many will thank us for it.

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*An Account of a new Mode of preserving an equal and salutary Temperature of the Air of Rooms for Consumptive Patients.* By Thomas Andrew Knight, Esq. F. R. S. President of the Horticultural Society, &c. &c.

(From the London Medical and Physical Journal for July, 1821.)

I transmit the following communication to the London Medical and Physical Journal, under an impression that it points out a better method of creating an artificial climate for patients with tender lungs, than any generally known; and and I write with the hope of averting from other parents, and other families, a calamity which I believe it has been the means of averting from me and my family.

The patient, who was the subject of the mode of treatment which I proceed to describe, had been perfectly healthy, though her appearance was delicate, from her birth, till she married, and had one child. Her appearance then, in her nineteenth year, became consumptive; and, within a few weeks afterwards, a sudden and very considerable discharge of blood, apparently from her lungs, but too plainly pointed out the nature of her complaint. It was proposed immediately to convey her to a southern climate; but, owing to events which I need not detail, this was not done. She passed the first winter in rooms which were kept warm and of as equal temperature as circumstances would permit; but there was a necessity for several blisters and the application of leeches. In the succeeding summer, her health and strength appeared somewhat to improve; but at the end of the following winter she was so much emaciated and reduced by a long-continued discharge of blood from her lungs, and the effects of her fe-

verish state, that I thought all hope of her recovery past; and I should have been much less unhappy respecting her if she had been at peace in her grave. I had, however, the consolation to find that her physician, Dr. Wilson Philip, (whose important and singular physiological discoveries have of course, made his name familiar to every medical man,) did not despond. He pronounced decisively, that if she remained another winter in the climate of England, her death was inevitable; but he expressed his hope and belief, that if she could be placed in a situation where she could have the benefit, during eighteen successive months, of a climate as favourable as the best part of an English summer, she would recover her health and strength, and be subsequently able to bear an English winter, though her lungs could never wholly regain their former power. Measures were consequently taken to convey her abroad; but I found in her a settled conviction that she should go never to return, and that her remaining strength was wholly unequal to the exertion necessary.

Under these circumstances, I thought only of the best means of giving her, as far as practicable, the advantages of a warm and temperate climate at home; aud, having been much in the habit of making such climates for plants, I looked forward with some hope, though with trembling anxiety, to the result. I stated to Dr. Philip my confidence that I could give to the air of the rooms in which I proposed that she should pass the winter, such a degree of humidity (she breathed most freely in somewhat damp weather,) as should be found best to agree with her, and any temperature, with little variation, which he should think likely to be most beneficial; and the following plan was adopted, with (under existing circumstances,) his most unqualified approbation. A flue of sufficient power, and surrounded by an air chamber of just sufficient dimensions to permit a person to go round the flue to ascertain that no smoke escaped into the air-chamber, was constructed wholly of brick work; space being prepared to receive garden-pots, to be filled with wetted sand, to give to the heated air the requisite degree of humidity; and, from the top of this air-chamber, pipes of tin, cased with wood, were made to convey a warm current of air, to rise through different parts of the floor of every room into which she should have occasion to enter. She was thus given the benefit of a warm temperature,—that of sixty degrees, with little variation,—as proposed by Dr. Philip, with a constant and rapid change of air. A summer temperature of eighteen months was thus given, and the result has exceeded my most sanguine hopes. The patient has perfectly recovered

her health and strength, and she suffers no further inconvenience from her past illness than inability to walk briskly up hill, or to sustain any continued bodily exertion without being soon out of breath.

Particular attention was paid to prevent the temperature of the air of the bed-room of the patient from becoming too low at an early hour of the morning in winter; that being the time at which, I have had reason to believe, patients with tender lungs usually suffer most in cold weather. It is probable that, in the case above stated, the patient was, to a great extent, benefitted by judicious medical treatment in every other respect: but upon this subject I do not feel qualified to speak.

*London, June* 13, 1821.

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*Case of Retroversio Uteri, attended with some particular Circumstances.* By WILLIAM BARTLETT, Surgeon, Great Bedwin, Wilts.

(From the London Medical Repository, July 1821.)

E. S., about twenty-three years of age, of delicate habit, and lax fibre, was attacked, on the eighth of August last, with frequent inclination to make water, and difficulty in passing it, as well as an inclination to evacuate the contents of the rectum. This affection was accompanied with occasional faintness; but not so severe as to prevent her from following her usual occupations. After complaining five or six hours, and whilst walking across the room, in an instant (to use her own expression,) "she felt as if she had lost her belly." This was soon followed by total suppression of urine, with pain in the back, belly, and both groins, but more particularly the left, with bearing down pains at intervals, similar to the first stage of labour, which she considered as actually begun, and accordingly sent for me in the night. From the symptoms complained of, I should have treated it as nephritis, but for the remarkable expression of *having lost her belly*, which led to an examination *per vaginam*. I was much surprised at finding the vagina nearly filled by a conical tumour, the apex of which touched the finger as soon as it entered the os externum; and in searching for the os uteri, I distinctly felt through the parietes of that viscus, the feet of the fœtus, the heels being towards the os externum. The finger passed very readily between the tumour and pubis, without being able to reach the os uteri, and towards the sacrum it met with resistance from the pos-

terior part of the vagina. That part of the tumour pressing against the sacrum, had a very irregular feel, similar to the overlapping of the parietal bones which we frequently find in the last stage of labour, where the head is large in proportion to the pelvis. As I could not discover the os uteri, the case was new to me: I had not met with such a circumstance during a practice of twenty years. I began to reflect upon the symptoms; the most distressing were the retention of urine and irritation of the rectum, besides which she had an anxious countenance, quick and irritable pulse, hot skin, headach and nausea, and the belly just above the pubes was painful to the touch, but loose and flabby to the feel, not any way like the abdomen of a woman in the seventh month of her pregnancy, which the sequel proves this woman to have been. As I invariably carry a female catheter in my side pocket, I emptied the bladder of more than two pints of transparent straw-coloured urine, which gave her much relief; ordered the bowels to be emptied with a common gruel clyster, and left a dram of the tinct. of opium to be added to another, if the forcing down pains continued, and gave her a saline demulcent mixture, with five minims of tinct. opii every four hours, and left her for the night, with a strict injunction, to remain quiet in bed till I saw her again at mid-day on the 9th; the bowels had been emptied with little or no benefit, and although the forcing down pains were frequent, she could not be persuaded to have the anodyne clyster injected, from the pain she suffered with the first. Her situation appeared worse than when I left her, as she had a much hotter skin; the pulse, were 110, small and cordy to the feel, the soreness of the belly increased, and the pains in the back and loins still continuing; the nausea had risen to frequent vomiting, so that very little but the mixture was retained, with continual headach and thirst, and retention of urine. To obviate inflammation, I took twelve ounces of blood from the arm, and to lessen the irritability of stomach and uterus, I gave her an effervescent draught every three or four hours, with five minims of tinct. opii in each, and ordered the bowels to be emptied once or twice a day by clysters, *if possible*, and the belly to be now and then fomented with decoct. papaveris, and I again emptied the bladder, and, as my residence was four miles from my patient, I instructed the nurse how to use the catheter, and gave orders that it should be done every four or five hours, to try the effect of Dr. Merriman's plan, as I considered it the most rational mode of treatment that I had been able to collect from various works

on the subject. Before leaving the place I called again. The head and skin were relieved by the bleeding, and the stomach was, in some measure, quieted by the draught she had taken. Upon my visit next day, although the sickness was less urgent, there was little or no amendment: she had still a hot dry skin, great thirst and headach, and there had been a good deal of delirium during the night; the pulse were more full than at any former period, and as the blood drawn yesterday had a firm coagulum of lymph on its surface, and was somewhat cupped, I determined on a second venesection; the rectum had been emptied once, and the bladder twice, in the twenty-four hours. As I had previously informed her, that there was a probability of relieving her by manual operation, if the plan I had put her on did not succeed, she became importunate that something should be attempted for her relief, saying, that the pain in the loins and left groin was greater than she could bear. I yielded to her solicitations, adopting the method first recommended by Mons. Gregoire, with one finger in the vagina and another in ano, having previously emptied the bladder, and varying the position from the back to the knees and elbows: my attempt was fruitless. the posterior part of the tumour was so wedged in the pelvis, that I could make no impression upon it; therefore I determined upon introducing the hand into the vagina, which being readily accomplished, I had the satisfaction, after a few minutes' gentle pressure, of replacing the uterus in its natural situation. The woman, from expression, was conscious of its being so. After withdrawing the hand, I introduced a finger, and found the os uteri very readily. The irritability of the stomach, headach, and febrile symptoms were soon relieved, but the soreness of the belly continued fort wo or three days. The use of enemas and the catheter were persevered in, and a recumbent position enjoined. As her health mended, she soon got tired of bed, and left it, which brought a return of the complaint on the 18th. The retroversion was not allowed to continue so long as to derange the system; she now became convinced of the necessity of a recumbent position, which, with the use of the catheter three or four times a day, and occasional clysters, were persevered in for a month, when she was able to pursue her usual avocations. During the time of her confinement in bed, I desired she would get on her knees and elbows once or twice a day, and remain in that position as long as she could without fatigue. She was taken in labour on the 7th of October, and after a tedious parturition of ten or twelve hours, was delivered of a full grown

child, the presentation face to pubes, and is now in a good state of health.

The peculiarities in this case were, first, the period of attack; secondly, the conical presentation, instead of the large round semi-globular tumour, as described by Smellie, Denman, Merriman, Nesbit, and others, and, thirdly, the retraction of the feet of the fœtus previous to labour. In regard to the period of attack, Nesbit says, it can only happen at any time from the third to the fifth month; Denman and Burns say the third or fourth; and in the six cases related in Dr. Merriman's little tract, the period of accession was from the second to the fifth month.

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*A Memoir on the Employment of Terebinthinous Remedies in Disease.* By JAMES COPLAND, M. D. Member of the Royal College of Physicians, London.

(From the London Medical and Physical Journal for August, 1821.)

To inquire into the operations of old and familiar remedies, which the experience of ages has proved to be of service in disease, notwithstanding their liability to injudicious prescription and consequent disrepute; to examine into their mode of effecting salutary changes in the system, and to attempt to give precision to our ideas respecting that influence in disease; to show how far they are really deserving of their reputation, what share of benefit results from their individual efficacy, and what to nature herself, or how great may be their separate influence in rousing and directing the vital energy of the system —would be a work of no small utility, both as tending to increase our stock of useful knowledge, and in banishing from the field the empirical exhibition of remedies, amongst even the legitimate members of our profession. To those who are entering upon the study of the healing art, it might be expected to prove, of considerable advantage, as it would tend to arrest their attention to the philosophical consideration of the process by which their effects are produced, and to connect the remedy with the pathology of the disease in its various stages and in its more complicated connexions. It may be urged that such a process would require a degree of knowledge greater than we at present possess, respecting not only the effects of individual remedies upon the general systems of the body and its separate textures, but also of the physiological pathology of disease, or

those early aberrations from an healthy state of an organ, which mark the commencement and first stages of maladies. I am, however, of opinion, that the state of our knowledge in the fundamental and collateral sciences of medicine is at present sufficiently advanced to furnish us with materials from which to draw incomparably more correct and more important conclusions than those with which we have been hitherto contented. The difficulties with which such an undertaking would be surrounded, are certainly not sufficient to discourage many members of the profession from its execution, by which an important desideratim in our otherwise excellent pharmacological and therapeutical works would be supplied.

Having premised these observations with the view of directing the attention of the profession to a closer examination into the process by which remedies operate their effects upon the animal economy, I shall now proceed to make a few practical remarks on the employment of the oleum terebinthinæ as a remedy in various diseases, in continuation of those offered to the public in the preceding Number of this Journal. Although my observations are apparently confined to the essential oil, they may be considered as applicable to all the varieties of turpentine, which chiefly owe their virtues to the quantity of the oil that they contain.

The turpentines were extensively employed in medicine by the ancients, and were probably in use long before the days of Dioscorides* and Pliny, who appear to have recommended them in many diseases, besides those in which they are prescribed by the moderns.

It is most probable, from the eulogy which Pliny† pronounces on the Pistacia terebinthus and lentiscus, and from their former abundance in the South of Europe, in the North of Africa, and in Asia Minor, that the turpentine yielded by these species was in most general use, not only amongst the Greeks, but also among the Egyptians and Romans. That they did not confine themselves, however, to the production of any particular species, appears even from the earlier writings of Celsus,‡ who, although he makes no mention of this substance, yet frequently recommends various parts of the different species from which it is obtained, as a remedy for similar diseases with those in which they are recommended in the more modern writings of Dioscorides and Pliny. Thus he frequently prescribes "Flos, nuclei ex pinu silvestri, et pineus cortex;" (see pp. 143 et 248:)

* Dioscor. lib. i. cap. 91, p. 50.
† Plinii *Historia*, cap. xxiv. sect. vi.
‡ Celsus *de Med.* passim.

and also adds, " Nuclei pinei stomacho idonei, urinam movent, semen contrahere videntur; non inflant, com melle edendi," &c. (p. 68 *et passim.*) Other instances could be given, proving that the bark, leaves, &c. of the various pines were used by the Roman physician, both as an internal remedy and as an external application; but no one can hesitate in assigning the benefit which experience had shown to be derived from them to the essential oil they contained.

The most decided proofs of the general admission of all the varieties of the turpentines into the materia medica of the ancients, may be gathered from the writings of Dioscorides, Pliny, and Aretæus. The first-named author, in his second book, classifies the turpentines into moist and dry. Pliny adopts the same arrangement; and both enumerate very fully the different species from which each variety is obtained. " Summæ species duæ, sicca, et liquida. Sicca é pinu et picca fit: liquida è terebintho, larice, lentisco, cupresso." (Cap. xxiv. sect. vi.) This enumeration accords very nearly with that given by Dioscorides; as do also his remarks upon the manner of employing them internally and externally in the diseases in which they were prescribed.

Aretæus* has been still more particular in his recommendation of this substance. He gave it internally, and frequently combined with nitre and rue, making honey the vehicle, in lethargy,† apoplexy,‡ melancholia,§ and in pleuritis.‖ The liquid turpentine was prescribed in pulmonary affections,¶ given in the combination just mentioned, but resorted to after venesection. It was also frequently recommended by him, in those diseases, as an outward application at the same time. He prescribed it also in enemas, in cephalea** and volvulus,†† in conjunction with cummin and rue; in phrenitis‡‡ and tetanus§§ as an external remedy; and, in the latter disease, it formed the principal ingredient in the cataplasms which were ordered to the injured part, upon the supervention of the tetanic symptoms.

Since the days of Aretæus, the turpentines continued to keep their place in practice. Prosper Alpinus‖‖ enumerates them amongst the individual remedies composing the Theriaca of the Egyptians, during the period of his residence in that country; and it is probable that they had retained their station

* Aret. cura Boerh. p. 76—126, passim.
† P. 79, B. ‖ P. 91, B. †† P. 106, D.
‡ P. 82, A. ¶ P. 94, B. ‡‡ P. 76, C.
§ P. 126, B. ** P. 116, B. §§ P. 86, B.
‖‖ *De Medicina Egypt*, lib. iv. p. 305.

for many ages. That they were a constituent in the polypharmacy of the middle ages, and entered largely as an ingredient into the farraginous preparations, which were both exhibited internally and applied externally in those times, may be easily conceived, from the later, but yet extravagant, praises of Fernelius.—"Terebinthina calefacit, mollit, disscutit, terget, expurgat: viscerum omnium, maximeque renum, obstructiones tollit, et angustos meatus aperit, urinam ciet, putredinem cohibet."*

As the chemical remedies and the chemical doctrines of disease became disseminated through Europe, the province of the terebinthinous class of medicines became invaded, their boundaries more confined, and, with many other celebrated galenicals, deprived of their due consideration. The diseases of the urinary organs were left, however, in their almost undisturbed possession; so that, up to the present day, they have always attached to themselves a portion of attention in the alleviation or cure of disease.

## PART I.

Reasoning from the apparent effects of the oleum terebinthinæ upon the animal economy, and from what I conceived to be the correct pathology of various diseases, I considered it a medicine of more general application than that hitherto assigned it. Although my experience of its efficacy has been rather limited in regard to some of the diseases in which I have ventured to recommend its use, yet I consider the success sufficiently great to entitle it to more general adoption. Its disagreeable odour, and its liability to produce offensive eructations and even nausea, but rarely actual retching, may have tended to prevent its more general introduction into practice. Those disadvantages, however, are easily obviated, and are certainly insufficient reasons, even were they just, against resorting to its aid in several diseases in which I am certain no other remedy can be found to produce more decidedly beneficial effects, when exhibited to fulfil correctly-formed indications, and with the view of accomplishing these only.

However weighty this objection may prove in our practice among the fashionable and fastidious,—those whose digestive organs possess no great share of energy,—it should have little influence in preventing its employment in dangerous ailments; and surely never, under almost any circumstance, amongst the labouring classes and the objects of the numerous

* Fernelii *Opera*, vol. i. p. 444.

medical institutions in the metropolis and large towns throughout the kingdom. This objection, which I have heard urged against this substance, and which on that account I now notice, may be frustrated, in a great measure, by a judicious combination or method of exhibition. Dr. Paris in his very excellent work on Pharmocology, furnishes the hint for one mode of getting rid of this source of annoyance; which is, by the addition of a few drops of some fragrant volatile oil, as that of lemons. This is in some respects similar to that which I have been long in the habit of using,—namely, giving with it some aromatic tincture or warm spice. In an intertropical climate, where I have found it necessary to prescribe it to individuals of weak digestion, and accustomed to large quantities of the hot spices of the country, the oil seldom failed of producing considerable nausea, if exhibited in a great dose, unless accompanied by a very large portion of such a corrigent.

### *Modes of Exhibition.*

I. *In regard to the quantity.*—The quantity of this remedy prescribed in a single dose ought to vary with the indications that lead to its adoption: 1st. When it is desirable that it should operate through the medium of the circulation, and be conveyed to secerning vessels and capillaries, it ought to be given in a dose of six or eight drops to one drachm, according to the frequency of its repetition. This may be called the *small* dose of the medicine. If exhibited in this quantity, it generally exerts its influence upon the kidneys, and hence proves diuretic. This virtue it, however, possesses more from the direct stimulus which it affords to that organ, than from any influence it exerts upon the absorbent system. In addition, however, to its effects upon the kidneys, it produces a very important one upon the exhalants and terminal vessels, when given in this proportion. It constringes their diameters by increasing their tone; and by these means proves beneficial in atonic hemorrhagies and dropsies.

2d. When given in a quantity which I consider a *medium* dose, that is, from one to two drachms, its effects upon the system are more general. But, then, these effects are entirely controlled by the duration of the intervals between the repetition of the remedy. If given in a single dose only, or if repeated after a longer period than six hours, it generally is entirely or in part absorbed, and may affect the urinary organs to excess. In addition to its action in this manner, it frequently gives a salutary impetus to the digestive tube; and

if the mucous coat, with its absorbing and secreting apparatus, is in a state of chronic disorder, a salutary change is frequently produced. When exhibited at intervals of less duration than six or eight hours, the latter effects are more manifest; whilst its operation through the medium of the circulation may be more or less marked, according as it has been given at longer or shorter periods, combined with other remedies, or as it may be owing to the circumstances of the individual. Instances of various diseases are of frequent occurence, wherein it is desirable to produce this extended operation of the remedy, cases requiring its more general effects upon the system, as well as its immediate influence upon the intestinal canal. This mode of exhibition may be resorted to in some varietes of epilepsy, in chorea, chronic hydrocephalus, &c.

3dly. The third, or *maximum*, quantity which may he taken of this substance, and which may be termed a full dose, is from four drachms to two ounces, according to the circumstances of the case and of the individual. If taken in this quantity, it generally operates as a cathartic; but that effect cannot be depended upon; it may produce an opposite one, and in that case it will be absorbed in excess, and may produce noxious effects. Having experienced its influence under such circumstances, I have since either given it along with another cathartic, or exhibited one soon afterwards, whenever it has been slow of producing a purgative influence. The advantages arising from employing the oleum terebinthinæ with this intention, are chiefly from its concentrating the vital energies towards the organs of digestion and chylifaction, and by those means effecting a more complete and permanent revulsion of the impetus of the circulation from the great nervous centres. Its effects upon the internal membrane of those organs, and the vessels opening upon its surface, are more efficient; and it tends to remove the viscid mucus and disordered secretions often obstructing their functions.

When exhibited in this quantity, experience has now proved its certain and almost specific influence as a vermifuge.

II. *Respecting the method of exhibiting and combining this remedy, so as to render it more agreeable, and at the same time to assist its effects in the different diseases in which it may be prescribed.*—This is a subject of importance as connected with the exhibition of this remedy, and indeed not of this alone, for it is an important consideration in the internal use of most of our active medicines. Dr. Cullen* found the unpleasant

* *Materia Medica*, art. Terebinthinæ.

sensations consequent to the ingestion of the terebinthinous remedies in any large dose, a considerable bar against their employment among delicate females, in several diseases in which he considered them of important service. Had he, however, prescribed them, even in the manner recommended by Aretæus,*—that is, combining them with some other aromatic stimulant, and making honey the vehicle,—his objection would have been in a great measure removed.

1st. It may be prescribed in either of the already-mentioned proportions, floating upon the surface of a draught composed of some agreeable distilled water, with the addition of a drop or two of some fragrant oil and a little warm aromatic tincture. The addition of two or more aromatics to this remedy will prevent it from producing any degree of nausea, or pain in the stomach, which its uncombined exhibition sometimes occasions. The propriety of employing hot aromatics in this manner has been judiciously noticed by Dr. Paris;† and I can fully confirm his observations, not only in this particular remedy, but also in many others which I have found it requisite to prescribe in irritable states of the stomach, surpassing what is usually met with in temperate climates.

Thus in the intermittents which prevail during the rainy seasons in hot climates, the state of the stomach is usually so irritable that it is with difficulty the smallest doses of the bark of cinchona are retained, when exhibited uncombined. If given, however, combined with aromatics to a degree proportioned to the habits of the individual regarding the use of those condiments, the dose of this admirable remedy may be carried to a surprising length, without producing effects in the least degree unpleasant. In this manner I have frequently exhibited half-an-ounce of cinchona at one dose, with the unvarying effect of putting a stop to the disease. The corrigents which I have thus been in the habit of prescribing most frequently, are the carb. of ammon. camphor, some of the hot aromatic spices, tinctures, and essential oils. The capsicum annuum I have found, both from personal feeling and from experience, with others, to possess the most pleasant and most permanent effects in correcting and in preventing the disagreeable sensations arising from other remedies.

2d. Another mode of administering this remedy, independently of the quantity, is by suspending it in the vehicle by means of some mucilage. When given in this form, the neces-

* Aret. *in loc ant. cit.*

† *Pharmacologia*, p. 104 et passim.

sity of conjoining it with another essential oil, in order to subdue its odor and correct its effects upon the stomach, is still required: the compound spirit of ether may be also employed with that intention; the tincture of capsici, or any other warm aromatic spirit or tincture, may be also added. This mode of exhibition I have never found to produce nausea; but, even when given in a large dose, its absorption is, in my opinion, thereby promoted.

3d. A third form under which it may be taken internally, and one in which it was generally exhibited by the ancients, is that of a linctus made with honey, or with any rich aromatic syrup. This mode may be chosen when it is desirable to give it in small doses: the necessity, however, of prescribing in the same recipe some fragrant and aromatic preparation must be sufficiently obvious when we direct the remedy in this form.

I have been of late frequently in the habit of prescribing this medicine for children of almost all ages, and in different proportions, but generally in the maximum dose; and I do not recollect an instance wherein it has not been taken by the child, or wherein it was afterwards rejected.

The lively author of the article upon Cookery, in the 69th Number of the Edinburgh Review, (p. 45,) ingeniously considers that the flavour of any substance arises from the odoriferous particles escaping during the process of mastication, and while it is held in the mouth through the posterior nares, and there, at the same time, affecting the organs of smell. In pursuance of this doctrine, and for the benefit of those who are doomed to copious draughts of nauseous remedies, I would recommend that the olfactory nerves, whether anterior or posterior, should be secured as far as possible against the invasion of the disagreeable odour; both while it is external to those watchful sentinels, or even after it has entered the portals which they so faithfully guard. The manner in which this may be effected requires not my formal prescription.

## PART II.

### *Observations respecting the particular diseases in which it may be employed.*

*Chronic Rheumatism.*—The terebinthinous remedies have been long in use in several varieties of this disease, as in lumbago, sciatica, &c. and experience has long demonstrated their essential service. Drs. Pitcairn and Cheyne were the first to recommend the essential oil in this affection; afterwards Dr.

Home and Dr. Cullen* employed it frequently. Home† gave it in the form of a linctus, consisting of two drachms of the oil and one ounce of honey; and of this a tea-spoonful was taken twice or thrice in the twenty-four hours. This was the same formula as that recommended by Cheyne; and, from the cases related by Home, it appeared to have generally cured the disease.

In more modern times, it was highly recommended in combination with the preparations of cinchona in this disease; but, as cases were of every-day occurrence in which cinchona alone produced unpleasant effects in the stomach, the addition of the oil only did not remove that objection, and it appears never to have come into very general use. When this remedy is employed in chronic rheumatism, it may be taken either in the small or medium dose, and may be combined with any of the preparations of cinchona, or with the senega, &c. triturated with mucilage into the form of a draught; to which tinct. capsici, or tinct. cardam., or spirit. aromat. comp., with a drop of some essential oil. ought to be added, in conformity with the observations already offered. The capsicum annuum‡ is, in my opinion, preferable to every other, both as an adjuvant and as a corrigent to other remedies in this disease; for I have ascertained that, if given in considerable quantities, in the form of pills, it will of itself remove this disease as soon as any other remedy.

*In Sciatica*, I have found the following linctus always efficacious:—R. Mellis optimi, uncias duas; olei terebinthinæ, tincturæ guaiaci ammoniatæ āā drachmas duas; olei carophil. et olei limonis, aa M iij. Misce ut fiat linctus: cochleare unum minimum bis terve de die sumendum.—The operation of the turpentines should be watched, lest they affect the urinary organs. I am much inclined to suppose that the use of diluents, if resorted to at the same time, will tend to determine their action towards the kidneys and urinary passages.

*In Lumbago*, I have never employed this medicine. Dr. Darwin§ found it of service in this variety of rheumatism, and gave it in the dose of one drachm twice a-day.

Respecting its mode of operation in removing this complaint I consider it to act like most stimulants possessing a permanent character. Its action in this disease cannot, however, be

* *Mat. Med.* loc. ant. cit.

† *Clinical Experiments*, p. 246 et seq.

‡ I shall give, in a following Number of this Journal, some observations on the medicinal qualities of this substance.

§ Zoonomia, vol. ii. sect. iii. chap. 2, sect. 6.

readily explained, while the pathology of the disorder remains unestablished. The prevailing opinion is, that this affection consists in a slow inflammatory action, or inflammation of some sort, existing in the fibrous textures of the body, or even sometimes in serous membranes; but it is now considered doubtful whether it actually does arise in muscular fibres. To this pathology has been urged the objection, whence comes it that rheumatic inflammation, if it be actually such, never terminates like imflammation in other textures? Because it is seated in *unyielding* and *thin* textures, can be the reply: the former quality preventing that relaxed state of the capillaries necessary to suppuration: the latter, as it allows its immediate connexion to sound parts, along one of its surfaces at least; and from no part, in consequence of this character, being removed to a sufficient distance from the healthy interior and exterior tissues to permit of its sphacelation, before the neighbouring textures participate in the disease.

But it may be again inquired, if it be granted to be an inflammatory or any analogous state of the capillaries, existing in a peculiar species of texture, whence arises its sudden invasion, and rapid termination, from causes which operate directly upon the nervous sensibility? To this I would answer, that impressions made primarily upon the nerves of a part may influence, for longer or shorter periods, the state of the lymphatic and capillary arteries.* That such influence may be equally exerted, whether it takes place through the medium of the system, or from the local influence of the causes. The mode of either being brought about, I must reserve to another opportunity to show: let it suffice at present to say, that rheumatism, and even gout most probably arises from constitutional or local and fortuitous causes operating changes upon the nervous constitution of a part; and that the primary affection in the nerves cannot long exist, without inducing changes in the state of the capillary circulation of a proportionate degree of intensity.

Such, then, being the view I entertain of this disease, I consider that the substance now under consideration operates in removing it, primarily, from the stimulant effects it produces upon the digestive organs, and by nervous communication upon the heart and other textures; and afterwards, when it becomes absorbed into the current of the circulation, it produces those effects in a more signal manner, by being conveyed to the very seat of ailment, and by stimulating the ner-

* By lymphatic arteries, I mean the colourless vessels, not admitting red blood.

vous fibrillæ distributed upon the affected capillary vessels, restores them to their natural tone and energy.

*In the hemorrhagiæ*, I consider it a remedy of almost immediate efficacy in many of the affections belonging to this class. It requires, however, great discrimination on the part of the physician to determine the precise circumstances of the patient, under which it shall prove of decided advantage; the quantity of the remedy requisite to produce the desired effect; and when to stop in its exhibition; for, if given in very small doses, so as to become absorbed into the circulation, without producing much previous increase in the action of the heart, it will generally prove of essential service: whereas, if the dose exceed even a few drops, if it be repeated too frequently, or if its use be too long continued, an increase of the disease may be the consequence. The effects, however, depend entirely upon the state of the habit and diathesis of the individual. A phlogistic temperament, even although the debility may be considerable, ought to forbid its exhibition. The best general indications for the internal employment of this remedy in hemorrhagic diseases, and those by which I have been guided, are the absence of plethora and the phlogistic diathesis; when there has been a previous great loss of blood; when the pulse is soft, weak, and easily compressed, indicating a want of tone in the arterial system. In a word, it can be confidently resorted to in all hemorrhages possessed of a truly passive character.

In many cases of hemorrhage displaying what has been commonly called the hemorrhagic effort, as preceded and marked by a sense of titilation, heat, &c. this medicine, if properly watched, is not contra-indicated; for, if it be given in such a quantity as to produce a considerable concentration of the vital energy towards the digestive canal, a revulsion may be effected from the part threatened, and thus, by the exhibition of the maximum dose, the occurrence of the disease prevented, at least for that period; and afterwards, by the cautious use of small doses of the medicine, so as to convey it into the mass of fluids, a degree of tonic and astringent effect will be imparted from it to the capillary vessels and arteries, sufficiently great, and indeed greater, than is barely requisite to withstand the impetus with which the blood may be propelled along their canals, and to preserve their integrity against the impulse given to their contents by the increase that takes place in the strength of the heart's contractions.

In the *Atonic Epistaxis* of children, I have more than once found it of service, and I consider that it may be resorted to

in many cases of *Hæmoptysis*, when that disease is accompanied with great debility, with considerable, although seldom with permanent, advantage. My friend Dr. Clutterbuck, lately found it of service in such a case; and I am sure there are many cases, usually ranked under this denomination of disease, wherein the deranged structure only exists in the mucous membrane of the bronchia and air cells, or amounts only to a relaxation of the capillary vessels on those surfaces, which would be considerably benefitted by the exhibition of this and other terebinthinous remedies, and would thus justify the employment of those medicines in pectoral complaints by the ancients.

When, however, there is reason to suppose that this disease arises from ulceration in the substance of the lungs, injuring the integrity of a considerable blood-vessel, even though much relaxation of the nervous and arterial systems were present at the same time, the use of the oleum terebinthinæ could be but of doubtful advantage; unless we suppose that, if conveyed through the current of the circulation, it may produce a beneficial effect upon the ulcerated surface, in the same manner as a diluted application of it frequently does in external ulceration.

In *Hæmorrhois*, especially when seated high in the rectum, as they frequently are in those who have suffered from repeated and continued attacks of dysentery in warm climates, I have sometimes found the turpentines of partial advantage, and have employed them as an adjuvant to other remedies. When this disease arises in individuals from the causes just alluded to, there is generally impeded or obstructed circulation in the liver, or, then, some degree of ulceration and stricture in the rectum, from its being frequently the seat of disease; under either of which circumstances, although the oleum terebinthinæ, and substances that yield it, may arrest the bleeding, the constititutional disturbance will not be diminshed.

In *Menorrhagia*, I have no experience of its effects; but I strongly entertain the opinion that the oleum terebinthinæ is calculated to be of the most essential benefit in puerperal menorrhagia or flooding, if given in a dose of an ounce or upwards. If exhibited in this quantity, I have no doubts of its influence in promoting the contractions of the uterus; and by these means producing the constriction and varied inflections of the vessels, affords a mechanical, but at the same time a natural, obstruction to the flow of blood, and soon terminates the mischief. Against this most alarming of all natural hemorrhages, I also consider an enema of at least two ounces of

this substance ought to be immediately administered. I recommend this, with the utmost confidence of success, to those whose practice affords them opportunities of putting it to the test of experience.

In *chronic Dysentery*, unconnected with disordered liver, and in those cases in which the disease is marked with a relaxation of the capillaries and mucous follicles, I have in several cases witnessed its decided utility. If it be had recourse to as an enema in this disorder, it should not be employed while the disease partakes of any of the acute symptoms; and, when resorted to, it ought to be in small quantity, as it will otherwise produce a return of the tenesmus and other distressing symptoms.

When given in the purely chronic form of this disease the medium quantity may be chosen, and exhibited in a combination which the circumstances of the case will suggest. I have preferred it suspended in a mucilage from the compound powder of tragacanth, with any of the astringent and tonic extracts or tinctures, and the aromatic corrigents. It may also in this manner be given along with rhubarb and ipecacuanha.

In the *chronic Diarrhœa* of children, in which there is reason to suspect slow inflammatory action to exist in the mucous coat of the intestines and in the follicular glands in that situation, few remedies, (if it is suitably combined, and given in a properly-digested plan, according to the circumstances of the case,) are likely to be of more permanent service.

The plan I have generally pursued in those cases, has been to prescribe a powder at bed-time, composed of the hydrarg. submur., pulv. ipecac. comp., pulv. rhei. or the pulv. tragacanth com. in proportions according to circumstances and the age of the child; and a draught in the morning, of the oleum terebinthinæ enveloped in mucilage, with the requisite corrigents. A medium dose in this affection has been the quantity usually prescribed.

In *Apoplexia*.—I have never prescribed it in this disease, but I think it may be employed with advantage in a maximum dose, from the revulsion it would produce of the circulation from the head. I am also of opinion that, in many varieties of *paralysis*, it would be calculated to prove of service, from its restraining the disposition to congestion and effusion upon the great nervous centres, and by rousing the ganglian nerves to increased energy. In order to produce this effect, it should be given in small and repeated doses, to admit of its absorption. It may be also exhibited as a purgative, in cases requiring the active operation of such medicines.

In *Epilepsia.*—Dr. Perceval was the first to recommend the oil of turpentine in this disease. Drs. Latham* and Lithgow† afterwards employed it with success in the same affection. From the circumstances of the cases detailed by these physicians occurring in females, and from its tending to promote the regularity of the menstrual flux, it has been argued that the benefit derived from its exhibition arises from its emmenagogue operation. It has been given, however, in cases wherein such a mode of operation was impossible, and with the most decided advantage. From what I have seen of its exhibition in several cases, both in my own practice and in that of others, I certainly consider that, in the majority of epileptic cases, whether occurring in the male or female, in the child or in the adult, no medicine can be administered with more certain prospects of success, when judiciously given or sufficiently persevered in. The manner in which I have prescribed it, is in small doses in some tonic or antispasmodic mixture, at the same time attending to the state of the bowels. Exhibited in this form, it becomes absorbed, and tends to promote a regular distribution of the nervous influence throughout the various organs of the body, and to support an equable degree of tone in the capillary circulation in the great nervous centres. If, however, this mode of exhibiting the remedy affect the urinary passages, its use may be intermitted for some time; as such an occurrence shows its presence in the circulation in a quantity sufficient to produce some degree of stimulus upon the terminal vessels.‡

The good effects of the oil and of the turpentines, when employed in this manner, arise, in my opinion, (which seems to be confirmed by the experiment related in the preceding Number,) from this essential oil being conveyed into the circulating mass, and there producing a more general and more decided effect than its local influence upon the digestive organs could have occasioned. I consider this substance as one of the few vegetable products that are not decomposed, nor materially altered, by the process of digestion; and that, like the nitrate of silver, the sulphate and oxide of zinc, and the solution of arsenic, whose operation in the cure of this disease is so remarkable, it is not resolved into simpler elements during that operation. I may here add, that those mineral substances just

* *Edin. Med. Jour.* vol. ix. p. 493. † *Loc. cit.* vol. xi. p. 300.

‡ By *terminal* vessels, I mean the extreme capillaries, whether running into veins or into those conveying colourless lymph, or terminating in any of the textures, whether into their substance, upon their surfaces, or into any other series of vessels, &c. which they may possess.

enumerated can be proved to exert their influence in this and in other diseases, from their presence in the circulation; but, whether they act by exciting the vessels in the quarter supposed to be the seat of the affection to a more regular and continued state of tone and energy, or whether such regular exertion of vascular action, kept up in the vessels ramified in the nervous centres, promotes the production and exaltation of nervous influence, which, as soon as produced, is distributed through the various channels, and ultimately influence the vessels that gave it origin, the reciprocal effects thus moving in a continued and unvarying chain, is a matter of difficulty to determine. The effects may be produced in either of these modes, but most likely by them both conjointly; that is, by the continued stimulus afforded the internal coats of the capillaries, and by the consequent state of the circulation in them generally, and in those distributed to the nervous centres particularly, favouring the production of nervous influence, and its regular distribution throughout the system.

Having employed this remedy in the intervals in the manner just mentioned, care should be taken to ascertain the exact period in which the invasion of the paroxysm takes place; and as, in most cases of the purely cerebral variety of the disease, the fit occurs during the night, a large dose of the oil, generally about an ounce, but more or less according to the circumstances of the case, with about half that quantity of the oleum ricini, ought to be taken so soon as the patient is in bed. By giving it when the patient has retired to rest, it is less apt to offend the stomach in irritable states of that organ. In many instances, this mode of proceeding will prevent the accession of a fit, even upon its first employment; it will at least, in most instances, defer the paroxysm. But, in more obstinate, and in even hereditary cases, by pursuing the disease in this manner, the epileptic seizures will at first become less severe; their attacks shall be afterwards deferred; and by pushing the continued small doses of the medicine during the intervals, so far as the state of the urinary organs will permit, and by anticipating the paroxysm by a full dose of the oil, they may be expected gradually to disappear. When this end is attained, the medical treatment and regimen ought to be directed to preserve the nervous energy and tone of the system, and to obviate plethora. It will, however, generally be found in epileptic patients, that the treatment most conducive to effect the former will also accomplish the latter.

In the epilepsy of children, which generally arises from the irritation of worms in the alimentary canal, or from a disor-

dered state of its mucous membrane, this medicine will seldom fail in proving of immediate advantage. It acts more speedily than any other in removing the cause, and consequently, in such cases, the disease.

Before leaving the subject of epilepsy, I cannot help regretting our want of such officinal remedy as the essential oil of valerian. It is an admirable remedy in both this disease and in hysteria, besides in many other complaints in which antispasmodics are indicated. It is to this oil that the virtues of all the preparations of valerian are owing, and it possesses the advantage over them of being infinitely more active and more easily and more pleasantly exhibited, especially to children, against whose diseases it is so frequently efficacious. It is highly esteemed in the north of Germany, and there supersedes every other preparation of valerian.

In *Chorea.*—I have prescribed the oleum terebinthinæ in two cases of this disease. In the one detailed in the January Number of the Medical Repository,* which alternated with rheumatism, and in which the disease affected the heart, and was ultimately fatal, it proved of no service; but it must be recollected that it was not resorted to until the very extensive derangement of structure, detected upon dissection, had proceeded to an irremediable heighth. The other case was speedily removed by this medicine, given generally in a full dose, and sometimes with a little of the oleum ricini to promote its cathartic effects.

In *Tetanus.*—I have no experience of its effects in this disease. In one very acute case of this frightful malady, that recently came under my observation, I intended to have given this substance a trial. It, however, terminated fatally before it was exhibited, in a more rapid manner than was expected. Dr. Phillips† relates a case of the idiopathic species of this disease, which was almost instantaneously cured by this remedy.

*Convulsio.*—I have in several instances witnessed the effects of this medicine in the convulsions of children, especially the sympathetic variety which originates in a disordered state of the alimentary canal. In such cases, I have given it so as to produce its cathartic operation, and always with the best success—the removal of the affection. In the convulsions proceeding from a primary disease in the brain, as they follow the course of such maladies, they will be considered in connexion.

* For 1821, p. 23. † *Medico-Chirurg. Transactions*, vol. vi.

In *Raphania.*—Three cases of this singular species of ailment have occurred to my observation in children. In one of nine years of age, which was particularly interesting on account of the nature of the muscular contractions, and indeed the whole phenomena accompanying the disease, but which my limits forbid me at present to detail, the oleum terebinthinæ was given, without producing any effect; but it must be mentioned, in justice to this substance, that every species of treatment equally failed. The arsenical solution, nitrate of silver, the preparations of zinc, and courses of cinchona and of antispasmodic remedies, also proved inefficacious. No appearance of irritation could be traced to the spine, to the brain, to the intestinal canal, nor to the gums. The child at last became suddenly exempt from seizure, six months after having made use of any remedy. In the two other cases, this medicine proved completely efficacious.

In *Colic.*—I have never ordered this substance in colic. Dr. Cullen* recommended it in the flatulent variety of this disease as an enema. I consider this form of exhibition the most eligible, and the flatulent species the only kind of colic in the cure of which it can be admissible.

In *Diabetes*, it certainly deserves to be tried, not by itself only, but also in combination with other remedies, as cinchona, &c. Dr. Darwin† recommended it in this disease, but has not mentioned his experience of its effects.

*Hysteria* presents several varieties, in which the terebinthinates may be employed with advantage. In those forms of the disease which arise from debility induced by menorrhagia and fluor albus, or in those connected with a vitiated state of the stomach and intestines, they may be given in doses and in a manner suited to the circumstances of the case; and either in such a mode as to be absorbed into the circulation, or to evacuate fully the contents of the intestinal canal.

Of the employment of the oil of turpentine in *Hydrophobia*, I cannot speak from experience; nor am I acquainted with any trial having been made of its effects in this dreadful disease. It certainly deserves experiment.

In *Mania.*—I am unable at present to speak of its effects in this malady. I have, however, one case under treatment, in which I have prescribed it in a medium dose, so as to operate gently upon the bowels, and by these means to allow its partial absorption. Sufficient length of time has not yet elapsed to permit us to be acquainted with its effects.

* *Materia Medica*, loc. ant. cit. † Vol. ii. sect. vi. 2, 4.

In *Marasmus*, accompanied with a diseased state of the mucous membranes and the vessels and follicular apparatus opening upon their surface, I consider that the occasional employment of a medium dose, or even any other quantity of this medicine, will be found of considerable service. In a very few such cases in which I have prescribed it, I have found it advantageous.

In the *Hydropes*. The oleum terebinthinæ and the terebinthinates have been long prescribed as a diuretic, especially during the two last centuries, by the German and Dutch physicians. Fonseca* gave the latter in barley-water, with this intention. Closius† exhibited them in the form of pills, combined with large doses of the sulphate of zinc. Such a formula he recommends for its diuretic properties. Werhof and Stahl‡ extol also their effects in dropsy; and Holst§ and Pop‖ praise them highly in such diseases, in Hufeland's Journal and Roeschlaub's Magazine: the latter writer considers them to be an excellent application to the roots of sickly plants.

Wilkes¶ says, "The etherial oil of turpentine is a most powerful diuretic." Hardinge prescribed it with this intention, in combination with an infusion of juniper berries and nitre, and directed it to be administered as an enema. Bang added it to olive oil, and recommended it to be rubbed over the abdomen in ascites.

In *Anasarca* and *Hydrothorax*, arising chiefly from a relaxation of the lymphatic capillaries, and marked by a serous or leucophlegmatic character of countenance, I consider that the terebinthinous remedies may be employed with advantage. But in neither can they be admissible when the arterial action is in any degree of exaltation, as it always is, either generally or partially, in the forms of those diseases long known under the appellation of acute dropsies. In those species, also, of dropsical diseases where the energy of the nervous influence, or moving power, is insufficient to the mass of fluid to be held in motion, and congestion in the venous trunks of vessels become the consequence, either generally or partially according to the extent of the cause, the terebinthinates may be resorted to with advantage. The doctrine of congestion, as laid down and illustrated by Stahl,** has been in the present day called to the

* *Consultationes Medicæ*. Venet. 1620, passim.
† *Problemata aliquot Argent*. 1649.
‡ Stahl. *Theor. Medic. vera, Pathol. spec.* P. iii. 858, 862.
§ Hufeland's *Jour.* B. xx. 2 st. p. 147.
‖ Roeschlaub's *Magazin*, B. i. 3st 10n.
¶ *On the Dropsy*, p. 264.
** *Theor. Medica vera*, passim.

explanation of the phenomena of diseases which cannot be so distinctly derived from such a source; but, in whatever disease such a state of vessels may be proved to have existed, it surely forms only an intermediate link in the chain of causation; an earlier one may be found in the nervous system. In the dropsies which derive their origin from any considerable structural derangement existing in an important organ, these remedies can be employed with but little expectation of advantage. Respecting my own experience of their effects in these diseases, that is very limited. I have prescribed them more in the progress of recovery from them, with the intention of promoting that process, and at the same time of invigorating the constitution, than to combat their early stages. The manner of prescribing these remedies in the diseases under consideration, has been to give them in small, but sometimes in medium doses, combined with other medicines according to the circumstances of the case.

In *Ovarian Dropsy*.—Having been led to speculate upon the pathology of this malady, from having it subjected to my close observation, and under circumstances of peculiar interest and distress, I resolved to employ other remedies and different modes of treatment from those invariably found hitherto unavailing. In two cases of those which have since fallen under my observation, I have employed the oleum terebinthinæ, or the terebinthina chia, in various proportions, directing them generally so as to be taken into the circulation, and exhibiting them occasionally in a full or maximum dose, so as to produce their full operation upon the alimentary canal. Local depletion and counter-irritants were employed at the same time; while the full vigour of the nervous energy was promoted by suitable diet and regimen. In one of these cases, the disease has been kept stationary during two years, which was all that could be expected, from the advanced state of the complaint. The other has not been half that period under occasional treatment; but it commenced at an earlier stage, and the disease is now reduced to a small tumour, perceptible only during some positions of the body.

In *Hydrocephalus*—1st. In the *acute species* of this disease. In the stage of turgescence, or invasion of the acute hydrocephalus, the oleum terebinthinæ may be employed as an useful auxiliary to other remedies. Nor do I consider that it should be ranked as an auxiliary only, although it may be resorted to in combination with other medicines. No substance, in my opinion, is more calculated to produce a complete derivation of the impetus of the circulation from the brain towards the digestive tube, than the one under consideration. As the stage

of turgescence* is merely the progression to the inflammatory state, the mode of treatment and of employing this remedy will differ but little, or at least only as it respects the energy with which it and other remedial agents ought to be entered upon. I have had several opportunities of using this medicine in the Institution for the Diseases of Childern, to which I am one of the physicians, and both in the acute and chronic form of this malady. But in a disease which, even in its invasion threatens the most imminent danger, to trust to the effects of this or any other single remedy, would, in my opinion, be a palpable want of activity in the physician: I have, on that account, employed other means in addition to its use. The submuriate of mercury with digitalis, (the latter especially in the inflammatory stage,) have been prescribed through the day and at night; while local bleedings have been resorted to, and pediluvia, followed by mustard cataplasms to the calves of the legs, have been also enjoined. The manner in which I have employed this oil, has been to give it the first in the morning, in such a combination as to ensure its drastic and derivative effects, and at the same time to prevent it from being ejected by vomiting. That degree of ventricular irritation that gives rise to the sensation of nausea, is not in any degree hurtful in these stages of this disease; but, from the sedative effects that result from it, in every respect the contrary: whereas, if it be increased so as to produce vomiting, augmented impetus of circulation in the head becomes the consequence, which always proves hurtful in the various species of this disease. This maximum dose ought to be continued every morning, especially in the inflammatory stage, until the treatment has effected its removal. In this stage, depletion may be carried to considerable length. Children can bear the loss of blood much better than has been generally supposed. The dread of carrying this mode of cure to an undue extent in the acute diseases of children, has tended greatly to promote a feeling of despair in the mind of the practitioner, when entering upon the treatment of many of their ailments. This sentiment was first combatted in some degree by the late Dr. Clark; but our progress in pathological research has most materially, and even lately, promoted the advancement of this department of the healing art.

In the inflammatory stage of acute hydrocephalus, the oleum terebinthinæ appears to be one of the best cathartics, and only excelled by the hydrarg. submur.; and if judiciously employed in conjunction with that remedy and digitalis, with depletion,

* See the admirable works of *Golis* of Vienna, on Acute and Chronic Hydrocephalus; the former has been lately translated by the able hand of *Dr. Gooch.*

cold applications to the head, and revulsants to the extremities, the nape of the neck, and between the shoulders, according to circumstances, this species of the malady may be combatted with more certain prospect of success than that hitherto entertained.

In the stage of effusion, this remedy deserves a trial. In one case, in which I believed that state to have existed completely, from the position of the child and disregard of external objects, &c. this medicine was exhibited in small doses through the day, with a maximum quantity on alternate mornings. This plan of treatment was continued for a considerable time, with little variation, unless when the medicine affected the urinary organs; when it was discontinued, and the hydrarg. cum creta, with digitalis and the spirit. æther. nitrici, were substituted for a short time in its place. The child ultimately recovered.

In *chronic Hydrocephalus*, I have employed the oil of turpentine in a number of cases, both directing it in order to produce its diuretic effects, and also as a cathartic. When prescribing it with the former intention, I have sometimes given it along with the digitalis; at other times, continuing its use for a few days only, and then employing mercurials, with digitalis and other diuretics, for an equal period; thus alternating the oil with this class of remedies sufficiently long to ascertain the effect. This mode of resorting to its use is most applicable to that condition of the disease marked by an atonic state of the exhalant and capillary vessels. If further experience shall confirm the good effects which I have considered to have arisen from its use in this and in other dropsical effusions, it may be viewed as owing chiefly to its tonic effect upon these vessels. The convulsions and very constipated state of the bowels which so frequently occur in this species of the disease, are, in my opinion, best combatted by a maximum dose of this medicine. In several cases in which the most active cathartics failed of producing any effect, although exhibited in surprisingly large doses, the oleum terebinthinæ, with half the quantity of the oleum ricini, have produced copious evacuations. Three cases of chronic hydrocephalus, accompanied with complete loss of the functions of the brain, have occurred to me, (two of which were in the Royal Dispensary for Children,) and have been treated in this manner where the patients have so far recovered as to become sensible to the impression of external objects; and, although the disease was evidently only partially removed, yet their parents have considered them sufficiently recovered to leave off the use of medicine. In these and the other cases that have fallen under my observation, and

which generally, from their very advanced stage, were particularly hopeless, this substance formed the chief cathartic remedy prescribed, (in addition to its exhibition in small and frequent doses,) and as such it was liberally given. However, under every mode of exhibition, but more especially when given in small doses in this disease, its effects upon the urinary organs, and the degree of distention of the bladder, ought to be examined.

In one case of chronic hydrocephalus in a child of nine months, and in which the head was enormously enlarged, the operation of letting out a portion of the effused fluid by puncture was performed, at my request, by my friend Mr. Dendy. Diuretic remedies were also prescribed. The child died some time after the third repetition of the operation.

In chronic affections of the urinary organs, the terebinthinous remedies may be resorted to with advantage. In all cases of a relaxed state of the vessels in the pelves of the kidneys, or in the mucous membrane covering the urinary passages, remaining after the debilitating effects of acute disease, their use may be attended with great benefit; and with such I have employed both them and the uva ursi; but neither is admissible while any acute symptoms remain.

The diuretic and stimulant effects of the oil upon the urinary organs, led Ballonius* to employ it as a remedy in *sterilitas;* and, he says, with advantage in several cases.

I consider both the oil and the terebinthinates very excellent remedies in *fluor albus*, and in diseases of the uterus depending upon a debilitated state of the vessels in that organ and its appendages. They deserve trial also in old *gleet;* and certainly, in that disease, might be expected to exert even a more decided efficacy than the copaiba balsam, which is so similar to them in chemical constitution.

In *Icterus.*—Guyton de Morveau recommended the oleum terebinthinæ, with ether, as a solvent of bilary calculi, and tried many experiments with it among the patients of Dr. Durande. What degree of efficacy it could produce while the calculus remained in the ducts, would be difficult to determine: that it produced any, may be doubted. Darwin and Saunders have both performed experiments, in order to ascertain the solvent power of this substance over biliary calculi when out of the body, which have not been demonstrative of its complete success, when even resorted to in this direct manner. The influence it has been found to possess in the cure of icterus, by Odier† in France, and by Herz‡ and Holst§ in Ger-

* *Consultationes Medicinæ*, vol. iii. p. 293. † Odier *de Med. Pratique*, p. 293.
‡ Herz, in Hufeland's *Jour.* b. iii. p. 575. § Holst, in de. b. xx. 2 n. p. 147.

many, must, in my opinion, be explained upon a different principle than that of its efficacy in dissolving the calculi obstructing the biliary ducts.

*Against Worms in the Intestinal Canal.*—The oleum terebinthinæ was recommended as an anthelmintic in the early part of the seventeenth century, by Thomas Bartholinus. Chabert, a French writer, extolled its virtues in that capacity in 1781. Since that period it has been frequently exhibited with this intention, especially against the tæniæ: and certainly no remedy can be resorted to with more certain prospects of success. It is quite unnecessary for me to quote an immense number of cases, detailed in the various Journals and Transactions of Medical Societies, illustrative of this position, as the point is quite established. I have employed it myself against tæniæ in seven cases, in all of which it effected the expulsion of the dead animal: it, therefore, acts in a double capacity in ridding the body of these troublesome inmates, by causing their death and their rejection. I have generally preferred to exhibit this substance against tape-worm in a pure and uncombined state, or nearly so, and frequently upon the surface of some distilled water, with the addition of a drop or two of some fragrant oil. The time best suited to its exhibition is the morning early; it ought to be taken before any thing whatever; nor should food follow its ingestion for at least two hours afterwards. If it does not operate by stool in four or five hours after it has been taken, a dose of the oleum ricini ought to be exhibited. I prefer this mode of prescribing the oleum terebinthinæ in tænia, to that of giving another purgative in combination with it, because, by leaving it to its individual effects for some time, it can the better exert its influence in destroying that animal; while the cathartic follows in sufficient time to prevent any very serious effects from its retention. The quantity of the remedy must be left to the physician prescribing, and its repetition in this manner must be guided by the effects of the first decided dose. My friend Mr. Winstone, of Charterhouse-square, a sagacious and observing practitioner, informed me that, on one occasion of his exhibiting this remedy in tænia, although it was given in a very large dose in combination with another cathartic, and although it produced the expulsion of a very large tænia, it nevertheless affected the urinary organs so as to cause bloody urine. This is, however, but a rare occurrence, and, although highly unpleasant, yet it is productive of no lasting bad effects. This instance may have arisen from an accidental activity of the absorbent system, consequent to a previous abstinence undertaken in order to promote the operation of the remedy.

In concluding this subject, I may add, that in the accoun of the plague as it occurred at Malta, given by Sir B. Faulkner,* of three cases of recovery from that disease there detailed, two of them arose from the accidental ingestion of an immence dose of this substance combined with camphor.

* *Edin. Med. Jour.* vol. x. p. 165.

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# SELECTED REVIEWS.

*Principes généraux de Physiologie-Fathologique, d coordonnes d'apres la Doctrine de M. Broussais.* Par L. J. Begin. 8vo. pp. 390. Méquignon-Marvis, à Paris, 1821.

(From the London Medical and Physical Journal for May, 1821.)

The fifth chapter of the work of Mr. Bégin treats of *the local effects of irritation.* On this subject Mr. Bégin advances nothing of considerable importance that has not been stated in this Journal, in the articles professedly devoted to the doctrine of Broussais.

Mr. Bégin labours hard to support the doctrine of Broussais respecting the origin of morbid growths and alterations of structure;* and he seems to be well aware that he has undertaken a perplexing task. With respect to the origen of all morbid tumours from irritation, (in the sense in which Mr. Bégin uses this term,) there is the strong objection, that such tumors are not unfrequently found in the lungs and other organs of new-born children: and then we are perplexed to the utmost, when we attempt to imagine how an augmentation of vital action simply, differing only in being more or less in degree, can produce the numerous varieties of morbid structure witnessed in the human body.

We pass over this vague and unsatisfactory disquisition to the next chapter, which treats of the *general effects of irritation.* In this chapter, also, there is but little to notice that has not been already considered in this Journal: the value of the author's discussions consists chiefly in details which cannot be

* See the Numbers of this Journal for January and April last, for details on this subject.

comprised in the limits of this Journal. Mr. Bégin, however, we should not neglect to remark, has combatted very forcibly for the truth of the most essential points in the hypothesis of Broussais relative to fever, though he differs from him in some points; and especially in regard to the order in which the phenomena of this condition of the economy are developed. Broussais seems to infer that fever, when it does not arise from primary irritation of the stomach and small intestines, takes place from irritation affecting those organs sympathetically from disease of some remote part. He thinks that diseases in remote parts,—as, for example, a severe wound in one of the legs, or a phlegmon in the arm,—does not excite fever, unless they sympathetically produce such irritation; and he is disposed to believe that the heart and the brain are affected, in the development of fever, subsequently to the stomach. Mr. Bégin thinks that sometimes one of those organs is affected first in order, and sometimes another: he considers, however, that a knowledge of the order of those affections is not a matter of so much importance as Broussais and some of his partizans have imagined; and that what is of greatest consequence to the physician, and that which he should always bear in mind, is that, "whenever there is fever, there exists irritation, more or less considerable in degree, of the mucous membrane of the stomach, the heart, and the brain.

Mr. Bégin dwells much, with good reason, on the influence of civilization, and the great excitement of the nervous functions which accompanies its progress, in the origin and development of diseases. "We often find, for example," he says, "according to the accounts of travellers, that the most extensive and painful wounds hardly attract the attention of the savages of North America or New Holland; and, if abundant suppurations, or other consecutive accidents which depend on the nature of the affected parts, do not cause them to perish, they become cured spontaneously and with facility, without having been sick. Their internal diseases present the same simplicity, and an analogous absence of any considerable sympathetic accidents." Amongst other illustrations of this point, derived from sources more near to us, he relates the following anecdote.

"On leaving Moscow, in the disastrous campaign of 1812, the tenor of my sensations led me to make an excursion over the fields which were one of the latest and most brilliant theatres of our military glory,—the fields on which had been fought the battle of the Moscowa. The villages which had surrounded them were all destroyed; the calmness of death reigned

over those plains where, only a few days previously, six hundred thousand men disputed a victory, the consequences of which were to become so fatal to the welfare of France. Our army, already overwhelmed with ills of every kind, passed in silence, and almost without recognizing them, the very places which had been rendered immortal by its valour. At the extremity of the open country bordering the road, and near to the confines of a forest, I was suddenly roused from my reverie by cries of lamentation that seemed to come from a spot very near to me. I looked around in vain; I could see nothing but putrefying bodies. The complaints, however, continued, and I could not then doubt that a living man was hidden amongst the adjacent ruins. Having descended from my horse, I, after much pains and long researches, discovered at the bottom of the ditch bordering on a bastion, and in the interior of a horse, a Russian soldier, whose leg had been carried away by the charge of a cannon. The unfortunate man had escaped the attention of those who, soon after the battle, had gone over the field for the succour of the wounded; and he had remained there for six weeks, finding in the body of the animal his food and habitation. He had deprived the ribs of their flesh, and removed the internal parts, and thus converted the thorax into a sort of cage, still enveloped with the skin, in which he lay in a half-recumbent posture. An abundance of pus flowed from his wound, and added to the stench of the carcass on which he fed. Several other horses, lying near to that in which he was situate, bore marks of his voracity; large pieces of them having been detached by means of an old knife which he had about him. This man seemed to be hardly sensible of the danger he had encountered. He was pale and meagre, but his strength appeared to be but little diminished; and his movements were characterized by firmness and assurance. The surface of the stump, which was exposed, was unequal, but covered with granulations of a favourable appearance."

On comparing this case, Mr. Bégin says, and others of a similar kind, with those presented by the practice of great cities, we are tempted to believe that they have occurred in subjects of quite a different species.

Mr. Begin discusses in this chapter, besides the phenomena of the several forms of fever, termed by nosologists idiopathic, inflammatory, synochal, typhous, eruptive, &c.—all of which, he argues, are connected, as effects, with irritation of the mucous membranes of either the alimentary canal or the respiratory organs,—dyspepsia, (which he attributes, generally, to

chronic inflammation of the mucous membrane of the stomach, (a point of doctrine that Dr. Parry has done much for the establishment of in England,) dysentery, (from irritation of the mucous membrane of the large intestines,) tabes mesenterica, scrofula, phthisis; in conformity with views of Broussais that have been exposed in this Journal, in which they are all traced to irritations of some one or other of the mucous surfaces.

Diseases of the heart are next considered, without, however, any thing remarkable being adduced. After this, Mr. Begin treats on the more chronic forms of inflammation. Although less violent than those produced by acute inflammations, the disorders caused by chronic irritations are not less remarkable, and do not present a less degree of interest. Persons affected with chronic gastro-enteritis, are exposed, Mr. Begin says, to the greater part of the forms of mental alienation; mania itself is very often referrible to this cause; melancholy and hypochondriasis almost always depend on it. Mr. Begin thinks that chronic inflammation produces mental affection as it is seated in different organs. Individuals having chronic gastro-enteritis readily despair of their lives; many of them feel an horror of existence, and put an end to it by suicide; "whilst others, a prey to constantly-renewed fears, dread the action of all external bodies, and regard with terror the approach of death, which they consider as inevitable." Chronic lesions of the lungs produce opposite effects on the intellectual functions: persons in phthisis preserve, to the last instant of their existence, the full powers of their intellects, and expire in the midst of preparations for future enjoyment. Organic affections of the heart exert a peculiar influence on the mental faculties: the subjects of them seem to fear all acute moral impressions, which cause disturbance of the circulation, and aggravate the evils which accompany them. Men who once evinced the most undaunted courage, become, on suffering disease of this organ, timid in the extreme, and cannot support even the idea of the smallest danger.

A point of very great importance in the history of irritations in general, and especially of chronic irritations, is the disposition they have, in certain cases, to occur in a periodic manner after regular intermissions.

"In what do intermittent differ from continued irritations?" is a question which Mr. Bégin discusses, as one of very great importance in regard to the etiology of intermittent fevers. If we consider, he says, the organ which is the seat of the former, during the paroxysms of their accession, or if we examine the ge-

neral phenomena they produce, it is not possible to discover any difference which may serve to distinguish them from the latter. Ophthalmia, cephalalgia, erysipelas, rheumatism, &c. do not differ in any respect, when they are of an intermittent kind from what they are when they are continued; and there exists between the periodicity of their occurrence and their absolute continuity, a multitude of shades which connect the two conditions. The excitement is sometimes too intense to be dissipated otherwise than very imperfectly: we then observe simple alternations of exacerbation and remission. At other times the diminution of the morbid action is more considerable, and the return of the paroxysms is marked by a rigor of greater or less severity; the disease is then termed remittent. In some other varieties, the "vital concentration" has hardly diminished, when it is reproduced, and develops another paroxysm; and, lastly, the intermission may be complete, and vary in duration from the period of a few minutes to that of two, three, or even seven or more days; and hence the multitude of distinct species of fevers of this kind arranged in the table of nosologists. All these conditions are closely allied, and we may frequently by stimulating the affected organs, transform a quartan fever, for example, into a tertian or quotidian, or even approximate the paroxysms so that it will be regarded as a continued fever; and, in all these cases, the morbid phenomena undergo no other sensible change than that of not disappearing at certain epochs.

The periodical returns of intermittent irritations in the same textures, when prolonged for a considerable period, produce disorganizations similar to those which are the results of continued chronic phlegmasiæ. Indeed, although perfectly intermittent during its early stages, the inflammation, on being frequently renewed, gradually becomes continuous: each accession adding to the stimulation, the organ returns in a less complete manner to its natural state. It remains red and irritated during the apyrexia; but this excitement is but little remarkable at first, because the slight degree of phlogosis it determines is hardly manifest after the state of intensity which accompanies the paroxysms. It is only after a long time, and when the local disorder is very extensive, that the symptoms no longer, in appearance, completely disappear, and that we witness the signs of the disorganization of the tissues. It is easy to trace precisely all these gradations, when the disease affects the exterior parts of the body: and we may acquire, by means of the general symptoms, almost as satisfactory knowledge of their succession when they have their seat in the viscera. In

cases of intermittent fever, we find, after their prolonged duration, the mucous membrane of the stomach thickened, dark-coloured, and more or less disorganized. The liver and the spleen,—which almost always participate with irritations of the stomach and duodenum, and which are in each paroxysm, the principal seats of sanguineous concentration,—become affected with chronic engorgements or secondary chronic inflammations. The mesenteric glands tumefy, and suffer change of their structure, in the same manner as if the intestinal irritation were continuous.

Besides the local effects above considered, intermittent fevers occasion very remarkable phenomena in the economy more generally. The first period of each paroxysm is accompanied by the concentration of the vital actions on the digestive organs; the blood, directed to the interior parts, engorges the liver, the spleen, the lungs, and reddens the irritated mucous surfaces; the heart is surcharged, and exerts itself to propel the fluid which accumulates in the large vessels, from the small vessels of the exterior parts being devoid of blood: hence results derangement of the respiration and circulation, and, as a consequence, disorder of all the other functions. The lungs especially gradually contract chronic irritation of their mucous membranes, which not unfrequently leads to phthisis. The heart suffers, in some cases, more or less extensive dilatation of its parietes, especially of those of the right auricle and ventricle. The circulation and respiration being thus periodically disturbed for several hours, the process of sanguification becomes less perfectly effected; accumulations of serum take place in the cavities of different parts of the body; digestion is effected with difficulty; the reparatory fluids become less abundant than is necessary, or possess ill qualities; and hence emaciation, debility, and sometimes all the phenomena of scurvy.

The alterations which the fluids undergo, from derangments of the organic functions, constitute the subjects of some discussions by Mr. Begin and he expresses his intention of considering this part of pathology more fully at a future period, in another work. At present he produces but little more than an obvious development of the notions of Broussais already stated in this Journal, with some additions, however, relating to the existence of more or less acrid secretions in cases of irritations of the organs, and to the generation of specific poisons; which comprise, of course, nothing more than a history of known effects; the causes of those changes being inscrutable by the senses.

We have passed over the preceding chapter more rapidly than we should have done, probably, had we not been desirous to devote the extent of space we have yet to appropriate to our account of this work, to that on the *general treatment of irritations*; and we enter on this subject with the more zeal, from a considerable proportion of English medical men—judging from the works of the older writers, or the incorrect accounts of superficial observers, ignorant of the principles which direct their conduct,—having erroneous notions of the merit of the practice of the French physcians, which they are pleased to regard with ridicule or contempt. Let us see whether Mr. Bégin's account of the therapeutic principles of the more enlightened part of them does not present matters which might be considered, more advantageously with somewhat different sentiments.

The first questions which present themselves when we endeavour to determine what should be the conduct of the physician in the treatment of diseases, are these:—Is it, in general, more advantageous than injurious to the patient to leave to nature the care of his cure? And, if this conduct be favourable in certain cases, and the contrary in others, what are the diseases which the physician should always combat; and in what circumstances should he abandon them to their natural course?

The partizans of the "*medecine expectante*" have adopted the principle that, in acute diseases, nature is disposed to a regular course, the issue of which is always more advantageous, in its results, than that of the violent methods of those physicians who would take into their hands the direction of the progress of the malady. Apoplexies, intermittent fevers of a very bad type, and some other very severe affections, have alone appeared to them to be beyond the restorative powers inherent with living bodies. Chronic diseases, on the contrary, although submitted to the same regulative principle of the organic movements, have almost always been considered to be above the efforts of this power; and it has been said that they, most frequently, claim the active interference of the physician.

It has been observed, by those same persons, that the termination of violent disturbances of the functions is often accompanied with a sudden and intemperate re-establishment of the secretions, and the evacuation of a more or less considerable quantity of fluids. They have given to this remarkable phenomenon the name of crisis; and generalizing the cases in which they have observed these crises to be followed by the

prompt restoration of health, they have pretended that the physician should attempt to do no more than to combat symptoms of too great violence, to prepare and favor, or give rise to, the critical movements.

The suspensions of the secretions, the burning heat and dryness of the skin, the thirst which torments the patient, the smallness in quantity and turbid state of the urine, are, in acute fevers, so many phenomena dependant on the irritation, which is the source of the general disease. If this primary irritation suddenly ceases, either by the spontaneous actions of the economy, or by the effects of certain medicines, it is a natural consequence that the secondary phenomena which they have produced should cease at the same time. We observe then that the secretions are suddenly re-established, and with a degree of energy more considerable in proportion as they have been more completely arrested, and as the organs which are charged with their elaboration have been in a state of more intense sympathetic irritation. If we examine the patient at the time the crisis is about to take place, we find that the irritation of the organ primarily affected is becoming less severe, and that there is substituted an excitement of the secretory organs, the intensity of which increases in proportion as the other diminishes. It seems probable, then, that it is not because the "*crisis*" appears that the malady is alleviated; it is because the irritation of the parts primarily affected has subsided, that the secretions are re-established: the critical phenomena are the results, and not the causes, of the cessation of the disturbance excited by the inflammation of the viscera.

These different views have given rise to two different modes of medical treatment: that in which the critical efforts are regarded as the cause of the disappearance of the primary disease, has led to the adoption of the "*medecine expectante;*" that in which they are considered as results of its cessation, to the practice which will be described after we have shown somewhat more particularly the indications to which it is referable.

Many phenomena which authors have not considered as appertaining to crises, should however be allied with them, since they depend on the same vital laws, and lead to analogous effects, though the final results are sometimes different. We have seen, for example, that, when an organ is irritated, the parts more intimately related with it by sympathy participate with its irritation. Now it happens, very often, that this secondary irritation substitutes the primary, and thus terminates the original disease. It is in this way that cutaneous eruptions,

boils, erysipelas, and many other affections, which succeed to gastritis, coincide with the disappearance of the latter disease after having been excited by it. It is by the same laws, however, that other diseases originate which are sometimes more severe and dangerous than the original one. Thus, in children, the brain, sympathetically excited by irritation of the stomach, and intestines, becomes in a few days the principal seat of disease, which will probably be more readily fatal than the gastric disorder. Sometimes the primary disease accompanies the secondary affection; and, in this case, the latter frequently seems to aggravate, rather than to alleviate, the former.

It has been generally observed, that the organ which predominates in the economy, and which characterizes the special idiosyncracy of the subject, becomes almost always the seat of the secondary diseases which substitute the primary; or any other part which has been frequently much excited, and thus become the most irritable point in the body will become the seat of the substituted affection. The physician may, then, in a great number of cases, be able to determine the organ in which the secondary disorder will appear.

Substitutions of irritation analogous to those we have seen take place from the internal organs to the external parts, will also be effected between the latter and the former. This phenomenon although it occurs in an inverse direction to that above considered, is nevertheless a consequence of the same principle, and is effected by the same mechanism. It is thus that, on the skin being the seat of irritation, this affection may disappear suddenly, and the mucous membranes of the stomach and intestines, or of the lungs, will become the seat of more or less violent irritation. A man is attacked with irritation in one or more of his joints: the digestive organs are then sympathetically affected: the pain in this seat is soon, or immediately, followed by the cessation of the primary disease, and a gastro-enteritis succeeds to it. It is not then said that gastritis is the crisis of gout, and yet, for the sake of congruity, it should be said; since, in the case where gout succeeds to gastritis, it is pretended that the affection of the joints is the crisis of that of the stomach. In many instances cutaneous diseases provoke internal inflammations, and disappear only on leaving behind them very serious maladies. Here the spontaneous efforts of the economy, far from being favourable to the patient, are evidently the contrary, and these effects of the *vis medicatrix naturæ* are even frequently fatal.

An important fact to be observed in the history of crises, is that, as the irritation is more acute, so is its disappearance more

rapid: the more vigorous the patient, too, the more apparent are the critical phenomena, and generally more prompt in producing their proper results, whether they be for good or evil.

When irritation is developed, it is certain that, in submission to the organic movements, it tends to a termination after a longer or shorter period. Now, this termination may happen either only after a very long and almost indefinite period, or by the death of the patient, or with the re-establishment of health, which is operated with or without a *crisis*. Let the patient be cured, that is the object of the physician: and, in order that the medical art may be as beneficial as it is qualified to be, let the disease be removed as promptly as possible. Whilst it exists, the patient suffers, and he is submitted to all the hazards which accompany its presence, and the possibility of its exasperation. It is perfectly indifferent to the individual who is cured of a severe disease, whether he has had a *crisis* or not. Besides this, the expected crisis, the precursors of which are watched with so much solicitude, is often wanting, when the disease is left to the spontaneous efforts of the system, or it is operated by a secondary irritation which is more dangerous than the primary; and, whilst we are observing the progress of the disease through its long course, unforeseen accidents may destroy the patient, or the irritation may become more obstinate and pass into a chronic form; or a secondary affection arises without the disappearance of the primary, and then we have two diseases to treat instead of one.

The foregoing remarks, (although they are but slight hints of what might be said on this subject), with the consideration that it is in the power of medicine to effect the desired object, seem to establish the axiom of the propriety of combatting irritations wherever they may be seated. This point being settled, it remains for us to consider the methods which are the most appropriate for the treatment of the diseases under consideration. The methods generally adopted consist in—1°. The application of general antiphlogistic measures and local blood-letting; 2°. The application of irritants to parts remote from the seat of the disease, in order to elicit the irritation from the latter; 3°. The topical application of stimulants to the part itself which is the seat of irritation. The second of these methods is founded on indications derived from the views of the spontaneous efforts of the economy that were above exposed: but let us examine each of the three in a particular man-

ner, in order to determine its relative value to the rest, and the cases to which it is most properly applicable.

The first is, in general, the most efficacious, and that which is attended with the least inconvenience to the patient; and it is that which should be employed, for the most part, in the early stages of irritation. It must not, however, be supposed that it may be applied without discrimination, or without some modifications on particular occasions. When the irritation is very intense, and the pain attending it suspends, almost completely, the influence of the nervous system on other organs; and the heart, hardly able to contract, propels but a very small quantity of blood into the arteries, it would be imprudent to effect at once so copious sanguineous depletion: such depletions have, not unfrequently, produced immediate death. The physician should then prescribe the application of leeches, and these in some instances should be only few in number: he will observe their effects, and, if the pulse become developed, he will then revert to this means in a less restricted manner. It is not a rare thing to see patients thus roused from the most profound oppression and extreme debility, present symptoms of excitement sufficiently violent to indicate general blood-letting; whilst, a few hours previously, they would, probably, have borne hardly a dozen leeches. In the contrary case, that is to say, when local blood-letting, although moderate in extent, instead of leading to an increase of fulness and strength of the pulse, is followed by contrary circumstances, and the debility is increased, the indication is evident: sanguineous evacuations must then be abandoned, and revulsives, that is, counter-irritants, should be resorted to, in order to elicit to the external parts the vital actions concentrated in the internal organs.

In subjects which present the phenomena of excitement of the sanguineous system to a high degree, it is easy to determine the conduct which it is proper to adopt: general and local blood-lettings, spare diet, and cool drinks, are indispensable, and their salutary effect is assured. It sometimes happens that a state of extreme plethora fetters the organic movements, and produces a state of debility that is merely apparent: some little acuteness is often necesary in order to discern this condition; and it requires, more imperiously than the preceding one, abundant emissions of blood, and antiphlogistic diet to the most rigorous extent. The subjects of this condition present, generally, a very large chest, a deep red colour of the surface of the body, especially in the face; the features of the countenance are unusually large; and there is a certain

embarrasment in their voice and respiration which indicates that the chest is surcharged with blood.

In cases where irritations occur in subjects previously shaken by disease, exhausted by previous excitement, and emaciated by chagrin or a penurious and unwholesome diet, the state of the patient is often sufficiently embarrassing to perplex the most sagacious practitioner. We must take care here not to evacuate, by general blood-lettings, the the small quantity of blood which is present in the external veins. By depriving remote parts of the fluid which excites them, we should augment the relative predominance of the irritated organ; for it would participate but very little in the effects of the depletion. Concentration of the vital actions is, moreover, operated with much greater facility in enfeebled subjects than in others; and it is more difficult to destroy their irritations by remote bleedings, because the irritated organs retain their undue proportion of blood with more tenacity. It is necessary, then, to apply our remedies as nearly as possible to the seat of the disease: it would even be desirable that we should immediately, without augmenting the irritation, subtract blood from the part affected; but this is not in our power in affections of the internal organs, and we must be content with operating on the part of the capillary system that is most intimately allied with them.

In cases of inflammation of the mucous membranes, it is the capillary system of the skin which is most intimately related with the parts in question, and it is, consequently, on this part that leeches should be applied: but in acting thus, we might deprive the system of so considerable a quantity of blood, in regard to the condition of the patient, that death ensues as a consequence of it. When, then, the relief of the local disease is not equivalent to the general debility produced by the blood-letting, the effect of this measure is disadvantageous. In such cases, it is more proper to have recourse to irritants on exterior and remote parts.

The propriety of blood-letting, in general, is here the more insisted on because the blood, although it is elicited to the part affected chiefly by the excitement of the nerves and vessels of this part, is itself a powerful cause of excitement, which it is desirable to obviate. We know that the blood is more abundant in a given part as the vitality of this part is more active; and that, on compressing the arteries running to it, without totally arresting the circulation, we weaken the sensibility with which it is endowed; or, in other words, by diminishing the quantity of blood which flows through a certain texture, we

render the vital actions of this texture less energetic. If we prevent, for some time, the afflux of blood to an irritated organ, the excitement of it ceases. It is thus that compression, methodically applied, opposes the inflammation of parts after strains, and removes inflammation of structures that can be duly submitted to its influence.

There are persons in whom irritations are so obstinate, and so tenaciously fixed in the parts affected, that it is almost impossible to destroy the morbid action, although we employ general and local blood-lettings, emollient applications and the antiphlogistic regimen, to the utmost extent. Indeed, in proportion as we go on practising blood-letting in such cases, the patient becomes enfeebled, whilst the irritation seems to become more and more obstinate: sanguineous evacuations would produce death rather than the removal of the inflammation. If we persist in the use of them, the patient becomes emaciated, sinks with astonishing rapidity, and arrives at a state of extreme marasmus, without the inflammation having been dissipated. It is advisable, as soon as we perceive this disposition in the case, to refrain from further depletions to much extent. The first period of the disease, that in which it is possible to remove suddenly the irritation, being passed, the disease will run its course, and the functions will be for a long time disturbed. The strength of the patient should here be carefully managed; we should gain nothing by depressing it too much or too rapidly; we must give revulsive measures with the adminstration of sedatives internally, and have recourse to the application of leeches occasionally, as the intensity of the symptoms may render them necessary.

A condition necessary in all cases, in order that irritation may be successfully treated, is the absolute rest of the irritated part. Our physiology shows us that the excercise of the functions is a powerful cause of stimulation for the organs which execute them: the actions performed by a given part cannot take place without the blood being elicited into its capillary system, and the nervous powers being excited. It is incontestible that inflammation must be exasperated by a cause which is followed by such results. Irritations of the internal organs, the progress of which is the most rapid, and which lead to the most serious consequences, especially require a state of repose of the affected organs. It is hence that silence and inaction of the body are so necessary for the cure of pneumonia and pleurisy. It may be remarked that general bleedings act beneficially in the former of these diseases; not only by depletion of the vessels, but also by diminishing the

mass of fluid the lungs have to elaborate; and thus they favour the repose we endeavour to give to those organs: and if very violent inflammation of the lungs constitutes, frequently, so obstinate a disease that it is not possible to remove it suddenly by means of blood-letting, as some other inflammations may, it depends, probably, on our not being able to effect a complete suspension of the functions of the organ, the exercise of which constantly tends to preserve the excitement of its tissue. In irritations of the digestive organs, we can, by withholding the adminstration of alimentary substances, produce a suspension of their proper functions; and the success of our treatment will commonly be in proportion to the degree of strictness with which this privation of food is insisted on.

The second method, or that constituted of the revulsive measures, may often be advantageously joined with the direct antiphlogistic means, when abstraction of blood has not been at once successful; but it is necessary to select with caution the period at which these measures are employed. If they are resorted to in a precipitate manner, they may give new activity to the original irritation, augment, in cases of gastro-enteritis, the arid heat of the skin, the frequency of the pulse, the dryness of the tongue, and the thirst, and render necessary further sanguineous evacuations.

It will be generally found that, whenever a remote irritation does not cause a cessation of the primary irritation, it increases, sympathetically, the violence of the latter; or, in the words of an English author, whose therapeutical disquisition constitutes one of the most interesting and valuable productions in medical literature, the irritation we produce in this case, instead of imitating the substituted, exemplifies the extended, disease. So that, whenever we judge it proper to have recourse to external irritants, we should use them in an energetic manner, and let their application coincide with that of antiphlogistic means; so that sedatives and refrigerants may be applied to the organ suffering the irritation, at the same time that the counter-irritants are placed on remote parts. By acting thus we may avoid the evils which are otherwise hazarded by the use of means of the revulsive kind.

The skin is the organ to which counter-irritants are most commonly applied: its exquisite sensibility, and the little danger attendant on irritations of it to a moderate extent, are the chief reasons for this choice; but it is not the only tissue on which those remedies may be successfully applied. They may, indeed, be administered internally, in cases where the intestinal canal is not the seat of irritation; and, when thus

employed, they act beneficially in proportion to the sensibility of the mucous tissue on which they are placed.

Although it is almost indifferent what species of stimulant be applied externally,—the principal object of consideration being the diversity of the energy of the substance employed, —it is of the highest importance that a judicious choice should be made in the substances with which we irritate the intestinal tube. The membrane which lines this organ possesses a sensibility which develops such very different, and frequently opposite results, according to diversities in the matters placed in contact with it, that the most dissimilar consequences often ensue from stimulation effected by bitter, aromatic, alcoholic, and purgative substances. Another circumstance which should contribute to render the practitioner careful in his selection of means of this kind, is this, that the substances employed may be absorbed and carried into the general circulation of the fluids, and thus cause various irritations in the system, more or less generally. Those substances should ordinarily be preferred that irritate the intestinal tube without acting with violence on the sanguineous system: amongst the matters of this class, purgatives hold the first rank. Besides the irritation they oppose to that we wish to remove, they excite, in the mucous membrane of the intestines, a very considerable organic movement, the object of which is the secretion of a greater or less quantity of mucous matter. This process requires the afflux of an inordinate quantity of blood; it sets into vigorous action the nervous faculties of the abdominal organs; and, when it is entertained for a considerable period, it is but rarely that nature does not abandon, sooner or later, the morbid operations it was carrying on in remote parts. There is also another advantage derived from the use of purgatives, when judiciously employed, which is the separation of a more or less considerable quantity of the fluids from the general mass; an effect which produces a degree of debility often equally beneficial with that which follows evacuations by blood-letting, whilst its duration is less permanent. Some choice is necessary in the species of purgatives employed; the milder sort being generally preferable for patients of the sanguineous temperament; whilst the more active, and even drastic, are often most beneficial in persons of an indolent or phlegmatic constitution. Bitter medicines are preferable to purgatives in scrofulous subjects, and during chronic and indolent inflammations of the lymphatic system. Besides the irritative action they exert on the mucous membrane, they excite the sanguineous system, and restore to it the predominance

it should preserve over the lymphatic vessels. We obtain here, then, a local revulsive effect, by the irritation of the mucous membrane of the stomach and small intestines; and a general revulsive effect, which consists in eliciting the vital actions to another order of vessels than that which is the seat of disease.

In addition to what has been said respecting the use of counter-irritants on the skin, it should be remarked that it is not a matter of indifference whether they are placed near to, or remote from, the part which is the seat of the disease. Whilst the irritation is very acute, we should apply the irritating topics to distant parts: it is in conformity with this precept that vesicatories are successfully placed on the lower extremities in acute gastro-enteritis; the feet, knees, and even the elbows, may be especially surrounded with rubefacient sinapisms, or vesicatories, in this case. Irritations about the large joints is preferred, because these parts are known to be related with the mucous membranes of the digestive organs by a particular sympathy, and that excitement of them exerts a more direct and powerful effect on those organs than excitement of most other parts. In proportion as the irritation has been prolonged, it is advantageous to approach the counter-irritation towards the seat of the former affection; and, when this is of a chronic kind, the use of the remedial measure should not be suspended until the disease has entirely disappeared.

The revulsive measures are not constituted solely of the use of topics which excite irritation of surfaces; there are various other measures which produce somewhat analogous consequences. Thus, exercise of the limbs, in the greater part of chronic inflammations of the viscera, is a resource as simple as it is efficacious, and one which should never be neglected. Muscular exertions elicit the vital movements to the exterior parts of the body; and they produce a revulsive action which may be lessened or increased any instant, according to the existing indications. Their energy is very different from that of a blister, to which the economy becomes insensible after it has existed for a few days. During convalescence from chronic diseases of the viscera, this measure is almost indispensable, and is the most powerful means of obviating a relapse. The extreme rarity of deaths amongst soldiers,—even when by no means free from sickness in their ranks,—during long and difficult marches, is a fact which has been remarked in the most general manner.

The third method for the treatment of irritations,—that in

which irritating substances are applied to the seat of the disease—is, of the whole, the least advantageous; that which most readily leads to an exasperation of the malady, and which, consequently, submits the patient to the greatest number of unfavourable chances. The circumstances under which it may be convenient to employ it are, then, but rare; and well-cultivated experience and much sagacity are requisite in the practitioner, in order that they may be recognized. The cases to which it is applicable, are the following:—

1°. When the morbid irritation is intermittent, and when the intervals of the paroxysms are perfectly exempt from super-excitation. In this case, powerful stimulants, amongst which is the cinchona, are of the greatest efficacy; but the first and most important of the conditions on which the success of the treatment depends, is that the state of apyrexia be complete; and, in proportion as it is less perfect and of short duration, it becomes more difficult to effect the cure. When the excitement is sufficiently intense to keep up, constantly, a febrile commotion, but not sufficient to prevent a recurrence of rigor,—that is to say, when the fever is remittent,—the first indication is to alleviate the irritation; and if, after the diminution of this, the periodicity remains, leaving intervals of complete absence of fever, it will be proper to employ cinchona. The theory of the agency of this remedy is pointed out in former parts of this article.

2°. Another case in which stimulants applied to a part affected with irritation are frequently successful, is that of certain hemorrhages, and especially hemorrhages seated externally. Stimulants seem to act here by causing the vessels to contract, or by temporarily rendering them torpid, after the first excitement from their application has subsided; but when the vessels are intensely irritated, and when the patient is very vigorous, the re-action which follows their application often aggravates the accidents, and renders the hemorrhage more violent. Sometimes they seem to arrest the flow of blood only by substituting a real state of inflammation to the hemorrhagic irritation. Now, this conversion may take place when internal organs are the seat of the disease, and, such inflammation being often not less dangerous than the lesion which has preceded them, the prudent physician will not use these means internally without the most careful circumspection.

3°. When the secretory vessels are especially affected with irritation, we may, in certain cases, substitute for this irritation a state of real inflammation, the course of which will be shorter than that of the former condition, whilst it terminates in a

more assured cure. But remedies of this kind, though accompanied with but little danger when they are applied to the urethra, the conjunctiva and several other surfaces, are attended with serious hazard when the digestive tube is the seat of the disease. Violent irritation of the mucous membrane of the urethra, or of the eye, may be borne without much peril, whilst that of the stomach and intestines would soon be mortal. There is a close analogy between hemorrhages and too-abundant secretions, and therefore the indications for the use of remedies of the kind under consideration, are similar in both cases; as is, also, the theory of their mode of agency.

Such is the outline our limits will permit us to trace of the clinical practice of the more enlightened part of the French physicians: it does not present a single trait that is not copied from the picture drawn by Mr. Bégin; and those who may consider the representation it gives of its object importantly defective, (as an outline,) or devoid of keeping, are requested to refer to the original, and not to form their judgment before they have contemplated it when filled up and coloured by the hand of an able master.

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*A practical Treatise on the Diseases of the Eye.* By John Vetch, M. D. F. R. S. E. Member of the Royal Medical Society of Edinburgh, and the Medico-Chirurgical Society of London; lately Physician to the Forces, and principal Medical Officer to the Ophthalmic Military Hospital. Three plates, 268 pages. London, November, 1820.

(From the London Medico-Chirurgical Review, 1821.)

The early authors of the Greek School, the Romans and the Asiatic Arabians, considered ophthalmic diseases as a constituent part of medical science, and the accuracy and minuteness of their descriptions testify their knowledge of all that pertains to them. Celsus, indeed, was of opinion that the same person might excel in the practice of both branches of the profession; and he considered him most deserving of praise, who understood the greatest number of diseases.

"Ego eundem quidem hominem posse omnia ista præstare concipio: atque, ubi se diviserunt, eum laudo, qui quamplurimum percipit." *A. C. Celsus de Medicine, p.* 409.

It was not, however, until the final erection of surgery into a separate department, that we find diseases of the eyes select-

ed as a distinct branch of medical education. This appears to have commenced under the Arabians of Spain; and in Germany and Italy the science of ophthalmology has continued to constitute a part of medical instruction. To these countries we are indebted for a great share of the impulse now given to the subject here; but our thanks are chiefly due to Mr. Wardrop and the late Mr. Saunders, for originating attempts to blend the knowledge and practice of the oculist with the chirurgical art. Other surgeons are now taking up the subject, in imitation of the continental practitioners, charitable institutions are formed and forming for the relief of those afflicted with diseases of the eye, and in a short time we shall become as eminent in the knowledge of ophthalmic as of other branches of surgery.

To a work so strictly practical, the result of long and extensive experience, analysis, of course, is peculiarly applicable, and we hope, by the following *précis* of its contents, to shew good cause why every practitioner, who has the means, should possess himself of so valuable a contribution to ophthalmic science. Our readers will therefore remember that, though not always speaking the language, we are always delivering the sentiments of our experienced author, in the following analytical delineation.

The work before us opens with observations on the *general character and treatment of ophthalmic inflammation.*

The conjunctiva is little else than a congeries of lymphatic veins, leading from the circumference of the cornea to the duplicature of the membrane, by which the serous portion of the blood is returned from the internal parts of the eye into the general circulation. Hence inflammation of this membrane partakes more of a venous, than arterial action. The sclerotic coat, on the contrary, being supplied with blood from the ophthalmic artery, a branch of the internal carotid, when inflamed, exhibits all the marks of strict arterial action.

Inflammation and its consequences do not take place in the cornea, until inflammatory action has been set up in the vessels of the sclerotic coat, even when the exciting cause is applied directly to the substance of the cornea.

Iritis, or inflammation, of the iris, is to be considered as a distinct form of sclerotic inflammation connected with some idiosyncracy, or morbid diathesis, previously existing in the constitution. Before any degree of acute inflammation can establish itself either in the cornea or in the iris, a similar action must have taken place in the sclerotic coat.

Inflammation of the sclerotic coat is slow in its progress.

It appears at the circumference of the cornea, forming a zone around it. Intolerance of light attends it. These circumstances distinguish this from conjunctival ophthalmy. Other peculiarities are also present in the former, when arterial action runs high, as the discharge of albuminous matter and the formation of chemosis. In the advanced stage of sclerotic inflammation pus is discharged, having a specific property.

In the treatment of conjunctive inflammation, when venesection is employed, it must be carried to the extent of producing syncope, by opening a large vein on the arm or neck. A sudden collapse of the vessels is thus produced, which will often prove the cure of the disease, as we have repeatedly seen. This salutary effect of syncope can only be ascribed to the laxity of the vessels, which renders them unable to recover their former excitement.

Local bleeding by cupping and leeches has generally sufficient control over sclerotic inflammation, to render any larger discharge of blood unnecessary. An advantageous situation for the application of leeches is the conjunctival lining of the inferior palpebra, and great benefit may be derived from applying them to the septum nasi.

The exclusion of light is often more detrimental than useful, particularly by confining heated air, and preventing the access of a more temperate atmosphere.

All washes and eye-glasses are for the most part worse than useless. The only proper mode of directing such applications is to inject the fluid over the whole surface of the extended eyelids by an elastic gum-syringe.

Blisters when applied to the temples never fail to prove injurious, by increasing the action of the arterial trunks, over which they are placed. In cases of purulent ophthalmy, Dr. Vetch has observed some relief from the application of blisters to the external surface of the palpebræ.

While combating the force of the general inflammation, the important structure of the iris may be secured from injury by the employment of narcotics; as hyoscyamus, belladonna, and stramonium. These may also be used as a mechanical force in detaching any recent adhesions. The argenti nitras may often be applied as an excellent sedative.

For the purpose of altering the violent and purulent state of the conjunctive membrane, it is impossible to possess a medicine of greater efficacy than the liquor plumbi sub acetatis, infused in an undiluted state. Nicotiana, as a narcotic and astringent, applied externally, is of singular use in abating both the pain and the excessive tumefaction.

Inflammation is never equally advanced or equally urgent in both eyes at the same time. Our remedial measures must be as vigorous in the one instance as in the other.

The following is a tabular view of the different forms of ophthalmic inflammation, consonant with Dr. Vetch's outline:—

## OPHTHALMIA, OR CONJUNCTIVAL INFLAMMATION.

*Species* I. Catarrhal ophthalmia, or *ophthalmia mitior*. Sporadic, endemic and epidemic; with or without chemosis.

*Species* 2. Oph. purulenta, or puriform ophthalmy. *Oph. gravior, the lippitudo, oph. vera, oph. humida* of the ancients. *Blephoroblenorrhœa* and *ophthalmoblenorrhœa* of the Germans.

Var. *a*. Ophthalmia of infants.

*b*. ——————— produced by the infection of ophthalmic virus.

*c*. ——————— by the infection of gonorrhœal virus.

*d*. ——————— by the metastasis of gonorrhœal inflammation.

*e*. ——————— rheumatic, syphilitic and arthritic.

## OPHTHALMITIS SCLEROTICA.

*Species* 1. Idiopathic, or corneal.

2. Irridial, or symptomatic.

We next come to the important subjects of *ophthalmitis sclerotica; ulceration of the cornea; and opaque cornea.*

The causes of sclerotic ophthalmy are external or internal, general or specific. When it appears after the decline of exanthematous disorders, which are among the internal causes, it has been distinguished by the name of morbillous and variolous ophthalmia. Dr. Vetch divides the sclerotic ophthalmitis into *sclerotico-corneal inflammation* and *sclerotico-choroidæal inflammation*. In the former the exciting cause is mostly external, and the inflammation occupies the external surface; in the latter, the inflammation manifests a rheumatic character, and by its ready extention inwards to the iris is chiefly known as iritis.

The first set of symptoms of the *sclerotic inflammation* are of a generic nature: increased vascularity, morbid sensibility to the impression of light, contraction of the pupil, pain, heat, augmented secretion of the lachrymal fluid, pyrexia.

The vessels, diverging as they come forwards, produce a zone of minute, hair-like vessels, distinguished by their rectilinear direction and their uniform concentration towards the margin of the cornea. Their colour advances from that of a delicate pink, or damask rose, to a deeper hue, and imparts a faint blush to the part immediately surrounding it.

As yet the back part of the eye and the surface of the palpebræ preserve their natural appearance.

When the vessels encroach on the margin of the cornea photophobia (intolerance of light) immediately occurs. In this situation they are considerably darker in colour, and give the cornea a relaxed appearance; and after the inflammation has abated, a loss of transparency is liable to remain. In old age this opacity of the circumference of the cornea often forms a complete ring, and is called annulus senilis.

Photophobia and contraction of the pupil, unless when accompanied with more evident signs of iritis, are merely symptomatic of the inflammation of the sclerotica and cornea. When the pupil is much contracted, the lighter or greener shade towards its inner circumference, appears to be the effect of a greater expansion of its fibres. We have known this appearance of the iris deter some surgeons from endeavouring to remove the disease; the sight being considered irrecoverable.

The inflammatory action of the vessels of the cornea has sometimes the effect of depositing lymph in the middle lamina, which has the appearance of pus. It is only in colour that it resembles pus, for it possesses no fluidity.

### *Treatment of Sclerotic Inflammation.*

Our first object is to ascertain the presence of any foreign matter. This may be done by everting the upper eyelid with a blunt probe, or by injecting tepid water or infusion of poppy or mallow over the everted membrane and eye itself, with an elastic gum-syringe.

At all periods of the inflammation Dr. Vetch has found the abstraction of blood from the temple, by means of cupping, to be the best method of subduing the disease. This operation may be aided by the application of leeches. General bleeding may sometimes be requisite, and antimonials in nauseating doses. Temporal arteriotomy has lately been objected to, and our author remarks that every advantage may be more safely and more effectually attained by venesection or cupping.

In violent inflammation, where photophoby is urgent, great

assistance is gained by the constant application of a solution of opium or hyoscyamus, of a temperature below that of the atmosphere. In slighter attacks more relief will be afforded by the occasional use of hot fomentations, or of the vapour of water and vinegar. So obvious is the tendency of warm poultices and long continued fomentations to effect relief, by accelerating the destruction of the cornea, that Dr. Vetch says,—

"I should consider any patient entitled to recover damages, in whom the disease has terminated unfavourably, whenever it has done so under the application of a poultice." P. 40.

Argenti nitratis appears to produce some specific change in the state of the vessels of the cornea, and when properly used, gives no pain. The vessels leading into the cornea should be barely touched with the caustic formed into a finely pointed pencil. After this let the eye be immediately washed by injecting a little tepid water with an elastic gum-syringe. A solution of the nitrate of silver in different proportions may supply the place of all the other metallic salts: and a convenient vehicle is made with mucilage and oleum ricini for the exhibition of vin. opii, extr. hyoscyami and liq. plumbi subacet.

Dr. Vetch's testimony respecting the evacuation of the aqueous humour, proposed by Mr. Wardrop, goes more to establish the safety than the expediency of the operation.

On the least affection of the iris being perceived, the extract of hyoscyamus should be employed, together with the means of subduing the external inflammation. Other vegetables besides those in use have the property of influencing the action of the iris: as euphrasia and anagallis arvensis.

After the violence of the disease has been subdued, photophobia with lachrymation and quick pulse may be relieved by digitalis internally administered.

The strictest attention must be paid to diet, and occasional purgatives will be required.

### *Ulceration of the Cornea.*

When this takes place in consequence of purulent ophthalmy, it commences on the external surface, and gradually deepens and enlarges, till it penetrates the whole thickness of the part. When it is the effect of primary sclerotic ophthalmia, it begins by *apparent* apostemation in the substance of the cornea, whence ulceration proceeds either inwards, so as to terminate in hypopion, or in an external ulcer. In the exter-

nal tunic of the cornea, ulceration may have the appearance of excoriation or abrasion. Sometimes a papula is observed communicating with a plexus of vessels on the conjunctiva. Small circular herpetic excoriations not unfrequently appear, combined with sub-acute, sclerotic inflammation, and tinæa of the tarsi. A hard, white, shining, ragged, irregular crust, is sometimes formed on the denuded surface of the middle lamina. It is long stationary, prevents the march of ulceration into the middle lamina, and leaves no opacity behind; an event which always happens when the middle lamina is the seat of ulceration. When the crust is absorbed by the progress of ulceration, a dusky yellowness, arising from a deposition of lymph, is sometimes discernible beneath. The removal of this crust by artificial means is extremely injudicious.

The yellowish substance found between the laminæ of the cornea, having as we before observed the appearance of pus and the nature and properties of lymph, should be removed. If suffered to remain, leucoma will follow. It may be removed in a mass on the point of a lancet or couching needle, or wound round the point of the instrument, if it should have a communication with the side or edge of the ulcer. A blueish appearance follows, from which the part gradually recovers. When all the lymph cannot be removed, slight scarifications assist in throwing it off, and occasion the reproduction of transparent cornea. To prevent a laceration of the serous tunic, the blade of the instrument should be applied almost parallel with the slough.

The moment the ulcer penetrates the inner coat, the aqueous humour escapes; and if the ulcer is within the line of the iris, an immediate approximation of the latter to the opening takes place, constituting procidentia iridis. After the adhesive process has taken place, the inner membrane projects in the form of a vesicle, and when this occupies a large portion of the cornea, it is called staphyloma. The origin and progress of this affection, we believe, has never been properly described by any writer before Dr. Vetch. Its resemblance to the head of the house-fly has obtained for it the name of myocephalon. The vesicle should not, if possible, be ruptured. Its formation may be prevented by puncturing the cornea at a place as remote as possible from the ulcer. Scarification of the slough, and the application to the ulcer of a solution of nitrate of silver, infusion of nicotiana, or calomel, may be employed occasionally with advantage. To the incipient staphyloma caustic should be applied, and it will be sufficient that it barely and instantaneously touches the surface. The iris will

thus be saved from any permanent adhesion. Scarpa, believing ulcer as the cause of ophthalmia directs the caustic to be applied, till a slough is produced; but Dr. Vetch's experience leads him to suppose, that such a severe practice would be fatal to the success of the remedy.

The colour of the tumour, when staphyloma is complete, is uniformly blue. When the pain of distention is great, particularly in damp weather, the evacuation of the aqueous humour is often required. The tumour having acquired its full growth, white bands traverse it; but the interstices retain their original tenuity and blueness. These bands are thick, hard, and bleed on being cut, and gradually extend over the whole tumour. While this process is going on, the repeated rupturing of the thin parts diminishes the tumour, which finally subsides, leaving an indelible leucoma over the place which it occupied. An artificial pupil may then be formed. Dr. Vetch objects to the removal of the apex, recommended by Scarpa, and has employed, with success, caustic and the introduction of a seaton, in order to accomplish the gradual diminution of the tumour.

The cornea is liable to assume a conical shape without any evident alteration of structure. With a view to improve vision, the aqueous humour has been evacuated, the lens removed and pressure long continued, to no purpose.

A pellucid dimple, supposed to proceed from intersticial absorption, is liable to appear on the cornea. It is generally stationary and free from danger; but Dr. V. has seen it, in many cases, become an open ulcer, terminating in procidentia iridis, after having been preceded by inflammation in the sclerotica.

### *Opaque Cornea.*

After the cessation of conjunctival ophthalmia, the villous elongation of the vessels of the palpebral linings often acquire a farther increase of size, and produce a granulated surface, with a secretion of pus. An inflammatory state of the sclerotic vessels gradually follows, the superficial vessels become varicose, the conjunctiva assumes a dusky and loaded appearance, and the cornea throughout becomes opaque. This opacity of the cornea is generally attended with dark coloured vessels, increasing as they come outwards, and being distinctly varicose. By degrees, the cornea becomes softened, and at length, small sloughs appear on its surface.

This disease seems to arise from a loss of balance in the supplying and returning vessels of the cornea. The diseased

structure bleeds profusely, when cut into, and there is a general oozing of pus.

This state of the linings of the palpebræ, termed by the Greek writers trachoma and sycosis, was distinctly described by all ancient authors; but the knowledge of it appears to have been lost until the time of St. Ives; who performed, a hundered years ago, the same kind of service to surgery, which Mr. Saunders lately rendered it.

In the treatment of this disease, Dr. Vetch is decidedly, and we think justly, averse to excision.

"The connexion of the disease of the cornea with that of the lids, and the eversion of the latter for treatment or examination, was practised by Mr. Saunders, who taught it to Sir W. Adams, and was resorted to by myself without any knowledge of the practice of Mr. Saunders, or the existence of Sir W. Adams, though I did not then, nor do I at this moment, consider the eversion of the eyelid to be generally necessary to the cure of the disease, its frequent repetition has appeared to me, not only unnecessary but prejudicial; and I have met with more success by simply raising it with the thumb of the left hand, so as to admit the application of a small porte-crayon armed with the blue stone or nitrate of silver, than I ever did by the complete eversion of the palpebræ, nor will I yield the evidence of my own sense and experience on this point, to any conjectural reasoning whatever. The treatment of this complaint forms but one feature of a disease, which, at the time I met with it, *was new to the profession in this country*, and although the practice proved *successful to the utmost possible degree, it has been condemned without inquiry* and without appeal, and *in a quarter where professional discussions cannot be entertained.*

"The whole power of high and official patronage has been employed to ensure the success of the operation for removing the granulation of the palpebræ by the knife; the failures have been concealed by every possible subterfuge; Nature, however, has proved her superiority, and it is now generally known that the operation, while it has been highly injurious in some cases, *has only proved successful when aided by those applications, which it was introduced to supersede*, and this success has been so limited, as to prove that their use is not yet properly understood, where the greatest pretensions have been advanced." P. 78, 79, 80.

Blood should be abstracted from the temples by cupping, and when the formation of a slough is apprehended, a leech should be applied to the inner surface of the lower eyelid. Determination of blood to the head should be avoided, and great limitation of diet enforced.

The escharotics abovementioned, being pointed, and fixed in a porte-crayon, are to be applied with great delicacy, and

in so many points only, as will produce a gradual change in the condition of the part, without the sloughing process. The eyelid seldom requires to be everted. As long as any purulency remains, this plan will be much aided by the daily use of the *liq. plumbi subacet.* When the disease resists these remedies, and the surface becomes hard and warty, Dr. V. has had recourse to a fine powder of ærugo or alumen ust. applied to the everted surface. These substances must be introduced in minute quantities with a camel's hair-pencil and carefully washed off, before the eyelid is returned. The kali purum may be substituted for the other caustics in these obstinate cases.

The 3d chapter of Dr. Vetch's work is on *ophthalmitis iritica vel sclerotica interna.*

This is a sub-acute ophthalmy, and may be referred to the general character of rheumatic inflammation, as opposed to the phlegmonic form of it. The former has a tendency to injure the structure of the iris and adjoining parts; the latter that of the cornea. The sclerotica interna seldom goes beyond the limits of adhesive formation, and this process may originate in the iris, while the redness in the sclerotic coat appears secondary.

The most frequent cause of this form of sclerotic inflammation, is the translation of rheumatism and gout. The predisposition may arise from the similarity of structure in the sclerotic coat and the tendinous expansions. Inflammation of this coat, with a disposition to attack the iris, is a frequent occurrence while the system is under the influence of mercury, and the specific efficacy of mercury, in checking the same form of inflammation, being an ascertained fact, there is some difficulty in explaining two such opposite effects. Other parts composed of the white, fibrous tissue are subject to the same effects of mercury. This medicine has the property of increasing the capillary circulation, and, while it is thus operating, if any part be peculiarly exposed to the influence of cold, there is danger of the increased activity of the vessels being suppressed. Then rheumatic inflammation follows. This may happen to the larger joints to the muscular fibres of any part of the alimentary canal, and we have known it occur in the tendinous expansion of the occipito-frontalis muscle. From analogy, we therefore agree with Dr. Vetch in considering the sclerotic inflammation, occurring during the use of mercury, as a rheumatic inflammation, occasioned by an excited circulation in the capillary system being suddenly suppressed by the application of cold.

Ophthalmitis iritica presents the zone and other general appearances we have already described. The pain is of a stabbing or lacerating kind; is increased by warmth, and accompanied by epiphora. Photophobia is not intense, and, as the disease penetrates the iris, sensibly diminishes. The patient perceives sudden flashes of ignited bodies; and, in bad cases, the sclerotica, losing its spherical form, suffers a partial projection, denominated *staphyloma sclerotica*. The pupil for some time preserves its circular shape; the smaller ring of the iris becomes of a light red colour; the greater ring takes a greenish hue; as the pupil contracts, its margin shews some little irregularities; the pupil itself loses its shining, black appearance; and the inflammation having extended to the capsule of the lens, vision becomes sensibly impaired.

The iris swells and presents a convex surface towards the cornea. The pupil becoming more angular, a gray, ash-coloured membrane appears to come forward from behind the border of the iris, which forms a medium of adhesion between its pupillary margin and the capsule of the lens. The sight is more impaired, and at last the eye becomes insensible to light. As the iris approaches, the cornea loses its healthy aspect. At length, one or more small tumours of a dark orange-colour appear on the surface of the iris, which terminate in suppuration. The matter which they contain, falling into the anterior chamber, produces hypopion, and the remains of the cyst are seen floating in the aqueous humour. The inflammation generally terminates in the effects which belong to the adhesive stage. The formation of the adhesive membrane produces the dilated, contracted, and obliterated pupil. A permanent dilatation may be owing to the adhesion of the greater ring of the iris, or to some disease in the choroid coat, or of the membrane lately described by Dr. Jacob, which lies between it and the retina. The pupil is frequently dragged, more or less, from the centre of the eye. The lymphatic membrane, spreading itself over the capsule of the lens, constitutes an important variety of false cataract, which, when viewed through a magnifying glass, appears to be vascular, and terminates in true capsular or lenticular cataract.

When iritis appears during the progress of syphilis, the iris becomes less moveable, the pupil contracts and lies towards the inner angle; the lens and greater ring change colour; the pupil becomes angular, and the iris advances. Photophobia increasing in the evening, and a fixed pain, chiefly in the eyebrow, attend. As the morning approaches, the patient enjoys some repose. Small red, or orange-coloured tumours appear at the pupilary or ciliary margin, and suppurate.

Iritis, with a primary inflammation of the sclerotic coat, is not a very unfrequent effect of gout in irritable subjects. With other premonitory symptoms, the sclerotic appears reddened, and does not propagate its inflammation to the border of the cornea, but, according to the observation of Professor Beer, leaves a narrow, blueish white ring around its edge, which can only be observed in the early stage of the attack; for the space is filled up by the vessels of the conjunctiva, which become varicose. When the sclerotic inflammation is formed, the common appearance of iritis comes on, but the pupil remains in its natural situation. The lymphatic membrane spreads rapidly, and the pupil becomes narrower, and at length closes. Sometimes the lens forms into a green cataract.

*Treatment.* Repeated cupping in the temples, as long as inflammation may appear in the sclerotic or iris, is necessary for the cure of all these species, and insures the efficacy of other means. A small quantity of mercurial ointment with opium, rubbed into the eyelid and temple night and morning, seems to have a specific agency in arresting the progress of the disease in the iris, the same may be said of the local use of stramonium and hyoscyamus. If the disease have occurred during a course of mercury, we may renew its exhibition with safety and advantage. When gastric derangement appears to be connected with rheumatic inflammation, we must try to remove that derangement. In protracted cases of this kind, the operation of an emetic often cuts short the disease in the eye. Dr. Vetch speaks highly of the free use of digitalis, as a powerful auxiliary; and we have repeatedly seen the best effects from a seton in the neck.

Chapter IV. is on lenticular and capsular inflammation. Until very lately, little has been added to our knowledge of the cataract since the days of Celsus and Galen.

The lens is subject to an acute inflammation, which may be called *lentitis*. Cataract exemplifies the adhesive; this the suppurative process. In lentitis, the lens gives out a ropy matter in extreme cases, which, after traversing the anterior chamber, reaches the external surface through the cornea, without losing its continuity with the lens. The escape of the aqueous humour is, in great measure, prevented by this ropy filament. Lentitis, in its common form, does not proceed beyond the adhesive stage.

Cataract is of two kinds: lenticular and capsular. It is hereditary. The lenticular cataract generally exhibits a dark gray colour, with a tinge of yellow, and remains darker at the

centre, than at the border of the pupil, even when the whole has become opaque. This disease is slow, has no influence on the iris, and does not altogether destroy vision. The space of the posterior chamber is distinctly to be seen, and the cloudiness is convex and without spots.

Capsular cataract begins with a few white, shining streaks or spots; its colour is never *uniformly* deep; and it affects the motions of the iris. Opacity of the lens usually soon follows. Capsular cataract may be confined to the anterior or posterior hemisphere, or both may be affected; but the capsulo-lenticular is the most frequent form of the disease, of which there are many varieties. The cataracta capsulos-lenticularis centralis in the human subject, is said by Beer to be observable soon after birth, and, sometimes to remain unaltered during the whole period of life. In the horse, this central speck has an almost uniform tendency to terminate in capsulo-lenticular cataract. We may here take the opportunity of observing that, a white spot is to be seen in the sound eye of this animal, by making the rays of light fall in a particular direction; as by turning his head slightly round in the stall opposite the light.

The cataracta caps. lentic. siliquata, is the cataract of infants. It has a light gray colour, and is seen at a considerable distance from the pupil. This recession of the lens is owing to interstitial absorption, which brings the hemispheres of the crystaloida nearly into contact.

*False cataract* is of two kinds: the one arising from inflammation, which throws out a pseudo-membrane between the uvea and the lens; and the other proceeding from violent concussion, by which a portion of the tapetum of the uvea is detached, and rests itself upon the anterior capsule.

It is of importance to distinguish the consistence of a cataract. *Hard cataract* is mostly of a dark colour and distant; and the iris is free, and, when expanded, vision is tolerably distinct. *Black cataract* resembles amaurosis, but is ascertained by dilating the pupil. *Fluid cataract* is always joined with perfect opacity of the capsule. *Congenital cataract* is always fluid at first. The size of the fluid cataract is generally larger than the natural lens.

Dr. Vetch's account of the complications of cataract is short but useful and explicit.

Application to microscopic objects predisposes to cataract, which forms, according to our author, in the eye which is kept shut. Sudden and strong light, especially in infants, produces inflammation ending in permanent, central opacity, or in cataract. Exposure of the head and eyes to the heat and light

of fires has the effect of predisposing to cataract. The fumes arising from the oxydation of metals, dust, the abuse of spirits, predispose to the disease in elderly persons.

*Treatment.* Generally speaking, the same line of treatment, which has been recommended for iritis, is equally applicable to the early stage of capsular inflammation, and it will be much assisted, as we have found from experience, by the use of setons or issues and rubifacients.

When the operation is requisite, especially if done by absorption, there is no advantage in waiting for the more perfect formation of the cataract, which is often capable of being removed at any stage by breaking up the lens; unless other circumstances should render delay adviseable.

The sixth chapter is on *Amaurosis.*

An interrupted vision is one of the first symptoms of this disease. Myopia, presbyopia, diplopia, and strabismus, are also associated with it. Light is sometimes sought for; at others it is painful. When amaurotic blindness is complete, the eye is insensible to light; and this may happen in one or both eyes. Amaurotic amblyopia is sometimes periodical, especially in hysteria and chlorosis. Total blindness is apt to take place in the end. Amaurosis appears in nyctalopia and hemeralopia. The former occurs to horses as well as to the human species; and the latter is sometimes epidemic. Whether the pupil be dilated or contracted, it no longer obeys the stimulus of light. The pupilary border becomes more or less angular, and the opening looks less clear than that of a sound eye. During the formation of the disease, pain in the eye or in the head, giddiness, and other symptoms of cerebral affection, are present. The middle period of life, and dark eyes, are most liable to amaurosis; and it is distinctly hereditary. Its production is favoured by continued observation of microscopic objects, and by any cause capable of augmenting the quantity of blood in the vessels of the head; by lightning; by violent mental emotions; by a disordered state of the abdominal viscera; by narcotics; by constitutional idiosyncracy with respect to diet, &c. by the internal use of lead. One form of amaurosis appears to be owing to a deficiency of pigment, and rarely admits of any cure, although it seldom proceeds to absolute blindness. The bottom of the eye appears pale, yellow, and glittering; and when the branches of the central artery become visible, and the iris pale, the eye resembles that of the cat. This species of the disease is met with in old people, and in younger persons after continued fever, in phthisis, and in atrophy.

Amaurotic amblyopia is seldom perfectly cured, excepting when it arises from narcotics. The action of the iris affords no sure criterion respecting the condition of the retina; and when one eye is attacked without any perceptible cause in the organ itself, the other may be expected to become diseased.

*Treatment.* Bleeding must be carried to the extent of producing syncope; leeches, purgatives, antimonial emetics, pediluvium, seclusion from the light, cold applications, counter-irritants to the neck and behind the ear, sinapisms to the feet and legs; the reproduction of habitual discharge or cutaneous disease, must also be had recourse to. Dr. V. says, the most advantageous situation for the leeches is the septum nasi. He strongly reprobates the indiscriminate use of Galvanism and electricity.

The second division of our excellent author's work commences with the subject of *conjunctival inflammation;* and first *on catarrhal inflammation, arising from climate and atmospherical changes.*

Dr. Vetch's observations agree with the testimony of most writers, that a humid state of the atmosphere, combined with a certain degree of heat, is that which proves most productive of ophthalmia.

### *Catarrhal Ophthalmia.*

A catarrhal inflammation of the conjunctiva is seldom met with in England; but Dr. V. has reason to believe that it is by no means unfrequent in Ireland.

The causes of epidemic ophthalmia in northern countries seem to have a less extensive influence than those which favour the production of epidemic catarrh or influenza. The influenza sometimes prevails over whole kingdoms, while epidemic ophthalmia is generally confined to particular districts. Hence Dr. V. is disposed to believe that the latter disease is more frequently conveyed by infection, than generated. At the same time he remarks, that the excessive crowding together of men, as in barracks, will often of itself engender inflammation of the conjunctiva; and render the constitution more disposed to be acted upon by the exciting cause whether natural or engendered.

The epidemic ophthalmy rarely takes on the purulent action. It commences with stiffness of the eyelids, fulness of the eye, sense of grittiness on the conjunctiva, pricking pain in the lachrymal caruncle. There is either aridity or copious

lachrymal discharge, attended with scalding, and mixed with mucus. The lining of the eyelid appears of a mottled, red colour. The conjunctiva is generally covered with patches of large vessels, and the chemosis is transparent and often partial. About the fifth day these symptoms decline, and the mucous discharge increases. In some cases suppurative inflammation follows, imparting to the conjunctiva a fleshy and villous appearance, with a greater degree of chemosis, and with distention of the cornea.

*Treatment.* Stimulants put a stop to the progress of this inflammation, by carrying the excitement of the vessels beyond the action of the disease. Spirits, vinegar, snuff, &c. when applied externally, have this effect; and a stimulating ointment at night, with the daily use of a solution of sulphate of zinc, are in most cases sufficient. In individual instances of catarrhal ophthalmy, a violent inflammation without purulency will often require a decisive use of the lancet.

We now come to an important and melancholy subject, the *purulent ophthalmia of the British army.*

When this disease prevails extensively, two forms of it are produced; the one from the impression of atmospherical causes, and the other from infection. Dr. Vetch informs us that the puriform discharge from the conjunctiva, arising from whatever causes, operates as an animal virus when applied to a healthy eye; and the disease proceeding from this source is by far the more violent and malignant of the two. The continuance of purulent ophthalmy in the English and French armies after their return home, and the repeated occurrence of it in the troops of this country, are striking proofs of its contagious nature. Dr. Edmonstone first made the public acquainted with its contagious nature, and in 1807 Dr. Vetch first established the fact, that the disease, as it appeared in this country, was *exclusively* produced by the application of the morbific secretion. A humid atmosphere has the effect of aggravating the symptoms; and for months or years after an attack, the eye is found to be influenced by atmospherical vicissitudes.

Our author presents us with a general view of the introduction, progress, and decline of the purulent opthalmia in the British army; from which it appears that the disease was kept up by confining the soldiers to barracks, many of them in marshy situations, and by a new and fatiguing system of drill, which was then in full operation. On the contrary,

"The French army, after its return from Egypt, instead of being confined to barracks, and harrassed by a fastidious discipline, proceeded from conquest to conquest, bivouacking in the field, or quartered on the inhabitants of the countries, which they subdued. The means therefore of disseminating the infection, if it existed, did not occur to the same extent." P. 187.

The smallest quantity of virus will produce the disease which sometimes follows in less than twelve hours; and the same person may again receive the infection. Both the eyes are generally attacked. A mottled appearance, and then a fleshy redness are observable in the lining of the lower eyelid. From this situation the inflammation spreads rapidly over the whole of the conjunctive membrane, as far as the cornea. This is seldom accompanied with any other sensation than a stiffness, or such a feeling as would arise from sand rolling in the eye. These sensations proceed from the turged vessels. Chemosis, bounded by the cornea, more or less complete, succeeds, together with œdema of the palpebræ, and inversion of the eyelids. Pus now flows in a continued stream, and attacks of severe pain commence in the eye. The pain is often intermittent and migratory, and sooner or later is succeeded by a sense of rupture of the cornea, and a gush of scalding water. The pulse is unaffected, unless the lancet have been freely employed; and the health is unimpaired; but sleep is absent. At length the external tumefaction subsides, and a gaping appearance of the eye presents itself. The cilia are everted and distant, and the eyelids cannot reassume their natural state in consequence of the granulated state of the conjunctiva, which lines them, and which is protruded more or less. The fluid discharged is the aqueous humour, which is secreted in great abundance. The ulcer in the cornea is sometimes followed by staphyloma; and in some cases the lens has presented itself at the orifice; but as soon as the capsule has given way, the lens and part of the vitreous humour have escaped. This destruction of the globe of the eye for the most part, as in horses, insures the safety of the other. When one eye is lost by staphyloma, and the other remains useful, it is well to lay the sac open and extract the lens.

*Treatment.* The liquor plumbi subacet. in its undiluted state is the application which Dr. Vetch recommends as the most efficacious. Its employment is followed by a sensation resembling that which arises from sand in the eye, and by copious lachrymation.

Venesection is another powerful expedient. In our general remarks on ophthalmy, we pointed out the necessity of inducing syncope, when the conjunctiva is the seat of inflammation; and have infinite satisfaction in confirming Dr. Vetch's testimony of the excellence of this practice, which we have found invariably successful. It is not sufficient that the vessels become pale: an actual deliquium animi must be produced otherwise the vessels will recover their former activity, and the disease advance.

A free exposure to, and frequent change of air are serviceable.

After Dr. V. had published his former work, he was induced to try the effect of various narcotics in this disease; and found that nicotiana possessed the properties of acting as an astringent, and of diminishing the œdema of the palpebræ. It has also the effect of relieving the pain and perpetual watchfulness. It should be applied at bed-time in form of infusion, in the proportion of two drachms to eight ounces of water. An infusion of galls and opium may be substituted for the former.

When active measures have been neglected in the beginning, it may be advantageous to employ local bleeding, which must be regulated in great measure by the pain; and, when the discharge continues acrid, blisters on the neck and behind the ears prove serviceable.

For the purpose of supporting nausea, Dr. V. employs an infusion of nicotiana. This however, it must be recollected, is only a measure of secondary importance.

Where venesection has failed to produce syncope, and the pain indicates that distension is going on; the external swelling being so far reduced, as to expose the cornea; the operation of puncturing the cornea may be had recourse to, and repeated, if necessary. A frequent repetition of this operation, it should be remembered, generally occasions a partial adhesion of the iris.

As long as the lower eyelid has internally a red and villous appearance, there will be danger of a relapse, from exposure to cold or other exciting causes.

*Eversion of the eyelids, or ectropion*, following Egyptian ophthalmia, is attended with great tumefaction and a granulated state of the protruded part. It is occasioned by the action of the orbicularis muscle, after the external œdema of the eyelids begins to subside. The tumour is the effect of strangulation, and the hypersarcosis belongs only to the surface. Instead of cutting away the granulated surface day

after day, as was formerly the practice, the everted portion is to be exposed to a light and careful application of argenti nitras and to be returned and secured in its place with a compress and straps of plaster or bandage. Every time the eye is cleaned, this process is to be repeated; and Dr. V. says,

"In the course of a few days the tendency to protrude will disappear, and at the end of a fortnight the patient will have so far recovered the use of the muscles of the part, as to be able, by their means alone, to raise open the eyelids at pleasure." *P.* 229.

### *Gonorrhœal Ophthalmia.*

Of this disease there appears to be two varieties: one depending upon a constitutional communication of the diseased action in the urethra, and another arising from the application of the gonorrhœal virus. The inflammation in the former is of the rheumatic kind. In external appearance it differs chiefly from the other, by the œdema being principally confined to the conjunctiva, where it is attached to the eye, producing chemosis; so that the eye is seldom concealed. The discharge is less, is of a more viscid consistence, and deeper yellow colour. There is more photophobia, and a greater tendency to attack the internal parts, and to destroy the cornea with slough or ulceration. In the treatment of this form of the disease, the free use of cold applications is best suited to promote a cure. Poultices are highly improper, and general bleeding is not so efficacious as in those cases proceeding from inoculation.

The treatment of gonorrhœal ophthalmia, arising from the latter source, may be successfully conducted on the same plan, which has been laid down for the cure of Egyptian ophthalmy.

### *Purulent Ophthalmia of Infants.*

Dr. Vetch's description of this disease is so accurate, that we shall give it in his own words.

"At first, the discharge is thin and whitish, afterwards, it becomes thicker and yellow; it collects in considerable quantities, and when the eyelids are forced open, it springs out with great force; occasionally it is mixed with blood. When the œdema ceases, the inner surface of the palpebræ becomes sarcomatous, and this diseased surface, when the eyelids are opened, forms an exterior fleshy circle, beyond which the relaxed conjunctiva of the eye comes forward as a second; and often the caruncula lachrymalis

adds still further to the valvular appearance, which the part presents." *P.* 258.

*Treatment.* Leeches may be safely applied during the whole course of the complaint. When the tumefaction begins, a good effect will be experienced by inserting a small portion of an ointment composed of any animal fat, without wax, six drachms, and of hyd. nitrico-oxydum, ten grains. As the purulency advances, the liq. plumbi subacet. will be found as useful as in other instances of purulent ophthalmy. To assist the separation of the slough, a solution of the argenti nitras is serviceable. The recovery of the relaxed conjunctiva may be further aided by dropping, or injecting into the eye a solution of alumen, or of cupri sulphas. We have seldom found any other application necessary, than the liq. zinci sulphatis injected with a syringe from the outer corner of the eye.

The plates accompanying this volume are not so well executed as we could have wished. We wish we could speak more favourably of the typographer. As, however, the work will be sure to pass through many editions, the printer will have an opportunity of recovering his credit, especially, if the author will take pains in carefully correcting the press.

We have seldom had an opportunity of perusing a book so replete with pathological science, and exhibiting such excellent and decided rules of practice, as the one before us. Dr. Vetch does not appear to write for the sake of spreading his name abroad, as is too much the fashion of the present day; but to establish facts, and to extend a correct knowledge of ophthalmic diseases, with the view of promoting civil and military hygiene. His close attention to the phenomena of the purulent and gonorrhœal ophthalmia, is deserving of the highest praise; and his former appointment to the Military Ophthalmic Hospital, was a proof of merit, which we hope to see acknowledged with a more substantial reward. This treatise on the diseases of the eye, should not only be read by the professed oculist, but most diligently studied by the physician, surgeon, and general practitioner.

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*An Inquiry into the Nature and Treatment of Gravel, Calculus, and other Diseases connected with a Deranged Operation of the Urinary Organs.* By WILLIAM PROUT, M. D. F. R. S. London, 1821, pp. 227.

(From the London Medico-Chirurgical Review, 1821.)

In the course of our critical avocations, it has seldom oc-

curred to us to rise from the perusal of a medical work with such favourable impressions as in the present instance. It is too often our lot to have our attention caught by glaring marks of hurried composition, and of inaccurate reasoning, or to find the author copying whole passages from preceding writers, without any attempt at verifying their observations. Dr. Prout is an author of a very different stamp, and to understand his work, it must be examined in a very different way from that which may frequently be practised with modern medical productions, without any injustice to the author. We mean to say, that it is not here sufficient to turn over the pages, and occasionally to pause upon a particular passage. This is a volume which must be accurately studied to be thoroughly understood. The author tells us that, for many years past, he has been in the habit of attending closely to the diseases of the urinary organs; and from the whole tenor of the work it is clear that he has done so, and that his pathological views have been almost exclusively the results of his own *individual* observation. An air of *originality* certainly prevails throughout this volume, which is highly creditable to the author, and the feeling of which was certainly predominant with us while engaged in its perusal; but we are far from saying, that it does not come recommended to us by other and higher merits than the mere novelty of the views which it opens. It is the work of an *accurate* as well as of an *original* writer. Dr. Prout has laid the best possible foundation for becoming a good pathologist, by the assiduous attention which he has long paid to the subject of animal chemistry in general. We do not now propose to discuss the question *how far* the doctrines of animal chemistry may be made subservient to the promotion of physiology and pathology, but of this we are sure, that accurate notions in that branch of science must prove at all times a most useful check on physiological and pathological speculations; and that, without them, an author is continually exposing himself to the risk of error.

It would be injustice to the writer not to add, that he has another merit almost as great as that of originality and accuracy. He is a very *cautious* pathologist. Conscious of the extent of his subject and of the necessity of extensive and varied observation for its full elucidation, he confines himself to the illustration of certain positions, and makes no attempt to anticipate, by a bold hypothesis, the labours and honours of succeeding authors. The subject which he has chosen may not, at first sight, appear calculated to display, to much advantage, the peculiar talent which we are disposed to give

this author credit for. The diseases of the urinary organs are few, and, comparatively speaking, of rare occurrence; and the interest which attaches to them is therefore certainly less than to many other subjects in pathology; but we shall find that Dr. Prout's views have an application far more extended than could have been anticipated from the professed object of the work. They have a bearing upon *general disease*, as much as upon disease more immediately connected with a deranged operation of the urinary organs; and this we would urge as a most important feature in the character of the work which we are now to analyze.

After expressing ourselves in this manner of the author and of the general value of his book, it may appear like presumption in us to differ from him; but with the same freedom with which we mention the merits, we shall speak also of what appear to us to be the faults of the work; and in this spirit, for which we have the author's own assurance that he will thank us, we enter upon our pleasing task.

The introduction presents us with a contrasted view of the elementary principles of the blood and urine in man. In this portion of the volume we do not observe any thing deserving particular notice, if we except, perhaps, a hint thrown out, (page 22) that the colouring principle of the urine may possibly be of two distinct kinds. One of these has an affinity for the lithate of ammonia, and a peculiar tint, and is that to which the lithic acid calculi appear chiefly to owe their colour. The other has no affinity for ammonia, is ill defined, and of uncertain composition; and yet in some manner it would appear to be intimately connected with the former as well as with lithic acid. The general results of this examination of the principles of the blood and urine may be best given in the author's own words.

"From the preceding sketch, we find that the most striking differences between the blood and the urine, is the complicated nature of the latter. The astonishing variety of substances formed from such a paucity of materials, naturally leads us to reflect upon the vast extent of the operation of the kidneys. On considering, however, a little more attentively the nature of the operation of these organs, we shall find, as Berzelius has justly remarked, that *acidification* constitutes the chief feature in them. Thus, the sulphur and phosphorus of the blood are converted by the kidneys into sulphuric and phosphoric acids: a new acid, the lithic, is generated altogether, &c. Such, then, evidently is the natural and healthy operation of these glands. We find, however, that in certain forms of disease, this acidifying tendency is carried to excess, and nitric

acid, oxalic acid, &c. are produced. On the other hand, it is occasionally suspended, diminished, or altogether subverted; and unchanged blood, or albuminous matter; neutral substances, as urea, or sugar; or even alkaline substances, as ammonia, lime, and magnesia, are separated in abundance; and the phosphorus and sulphur at the same time pass through the kidneys without being acidified. With respect to the character of the diseases attending these states of the urine, it will be generally found, that when acids are generated in excess, the urine is commonly small in quantity, and high coloured, and the disease inflammatory: when neutral or alkaline substances, the urine, on the contrary, is generally pale coloured, and larger in quantity; and the diseases are those of irritation and debility." P. 31.

After acknowledging the difficulty which exists, in the present state of our knowledge, of devising an unexceptionable mode of classing the diseases connected with morbid states of the urine, the author assumes as the basis of his arrangement the simple principle of the *solubility or insolubility* of the principles met with in urine. He divides his subject accordingly into two sections; the first including *diseases in which principles soluble in the urine are morbidly deranged in quantity or quality;* the second, *diseases in which principles insoluble in that secretion are similarly deranged.* Under the first of these general divisions he arranges.—1. Various forms of albuminous urine. 2. Anonymous diseases, in which the characteristic symptom is an excess of urea. 3. Diabetes. Under the second, all the various forms of gravel and calculus. As a general principle of primary importance in all diseases, it is then urged that the mere circumstance of a *diminution* or *increase* in the flow of urine will seldom fail to furnish us with a clue to the actual condition of the system, and consequently to the principles upon which a disease is to be treated. A diminished flow of urine accompanies an inflammatory state of the general system. An increased flow of urine, (or diuresis) very constantly accompanies the state of nervous irritability. As we proceed in the analysis of the work, it will naturally occur to our readers that there is more science in the system of the professed *water-doctors* than the world has yet had the charity to allow them.

These remarks are introductory to the consideration of *albuminous urine*, with which the author sets out. That urine often contains a large quantity of coagulating matter, albumen, has been long known, and the fact was lately urged upon the attention of practitioners by Dr. Blackall, as one of great importance in the diagnosis and treatment of dropsies. It has

hitherto been always imagined that the urine is rendered albuminous by the serum of the blood. Dr. Prout, however, is strongly inclined to believe, that it is derived immediately from the chyle. He has observed that the albumen of the chyle differs in its chemical characters, as well as in its sensible properties, from that of the blood; and that the albumen found in urine is most generally similar to the former. The occasional presence of chyle in the urine is the chief novelty in the pathological views which the author gives us in this first chapter; but there are several interesting particulars here brought forward regarding the albuminous condition of the urine, and the states of system in which it is observed, which it is also necessary to advert to.

In almost all cases of albuminous urine, the usual principles found in this secretion, (urea, lithic acid, &c.) are deficient in quantity. Hence albuminous urine scarcely ever exhibits a pink sediment. Dr Wells, indeed, observed two instances of such an occurrence; but it is undoubtedly very rare. Urine which is passed some length of time after a meal is always the most loaded with albumen. One instance is recorded, (page 41,) where the urine, passed in the evening, after an early dinner, became, on cooling, a solid coagulum, assuming the shape of the vessel, and resembling blancmange. This albuminous condition of the urine occasionally exists in the most healthy, and often unsuspected. The constitutional symptoms which attend it are seldom severe, and may be characterized as unpleasant rather than dangerous. In a case recorded by Dr. Wells, the disease continued for nine years. When such a state of the urine is *permanent*, and *excessive*, it necessarily indicates some great derangement of the animal economy. The symptoms attending it are stated to be as follows:—

"In slighter cases there is generally a frequent desire to pass water, and for the most part decided diuresis. I have never known albuminous urine attended by positive pain, though the patient, for the most part, complains of certain indescribable sensations, which render him conscious that all is not right. In severe cases, where the drainage from the system is greater than natural, there are, as might be expected, an inordinate craving for food, and other symptoms somewhat resembling diabetes." 39

Such a condition of the urine appears to be excited by a variety of causes, though in many instances its origin cannot be ascertained. The author has observed it to follow a long course of mercury, the use of stimulating diuretics, exposure to cold, and violent passions of the mind.

The author evidently distrusts Dr. Blackall's views of the pathology of albuminous urine, or rather, we should say, Dr. Wells's, for we are informed (page 48) that the notion of albuminous urine being connected "*with too great action in some part of the system*," originated with that author; yet with his characteristic caution, he refrains from giving a decided opinion on the subject. He does not deny that there may be cases where the urine is albuminous, in which blood-letting is useful, but he questions very much the propriety of the practice, whether in dropsy or any other disease, upon the *mere* ground of the urine being albuminous. That irritable state of the whole system, and especially of the kidneys, which usually attends the separation of albuminious urine, appears to the author to indicate the use of sedatives, and especially of opium; but he qualifies this afterwards by saying that albuminous urine does not, in the present state of our knowledge, lead to any particular remedy or mode of treatment. Now we may as well take this opportunity of observing that Dr. Prout appears to us to have an overweaning fondness for this principle of irritability, and its usual result, the general practice of exhibiting opiates, for which we know not how to account. This seems to us, indeed, to be the leading error of the author. We shall have occasion to find him alleging the existence of the same condition of the system, and recommending similar practice in almost every disease of which he treats. We cannot persuade ourselves that he is always borne out in this by the symptoms, even upon his own shewing. In the case of *albuminous urine*, for instance, the only symptoms noticed are a frequent desire to pass water, and a degree of inordinate appetite. Yet these are at once declared (page 39) to be *symptoms of irritability*, and to *indicate the use of sedatives*.

Chap. 2. treats of those diseases in which an excess of urea is the characterstic symptom. As they have never yet received any name, nor excited any attention among pathologists, we think it may be advisable to point out in what manner this symptom is to be ascertained, and judged of, in order to direct the attention of our readers towards it in any obscure case which may come under their notice.

A little urine is to be put into a watch-glass, and we are to add to it carefully nearly an equal quantity of pure nitric acid, which, from its greater specific gravity, will subside to the lower part of the glass, allowing the urine to float above it. In healthy urine, the acid and the urea do not act upon each other until the urine is concentrated by evaporation. In cer-

tain diseased states of the urine, however, this occurs without evaporation, or what the author calls *spontaneously*, and a crystaline compound results. This happens where the urea is in excess. The difference *(degree)* of excess can be inferred, near enough for practical purposes, by the greater or less time which elapses before the crystalization takes place, which may vary from a few minutes to two or three hours. (Page 11.)

The diseases in which an excess of urea may be considered in some degree as characteristic, have been sometimes denominated diabetes insipidus. They differ however considerably from genuine diabetes, though the *quantity of urine* voided is for the most part above the natural standard of health. The average specific gravity of the urine in these complaints may be stated at 1.020. Most generally it is pale, but in some instances it has been observed high-coloured, resembling porter, more or less diluted with water. It is very prone to decomposition, becoming speedily alkaline, especially in warm weather.

The principal symptom of the affection thus characterized is a frequent and irresistible desire of passing water, both by night and day. There is occasionally a sense of weight or dull pain in the back, with irritation about the neck of the bladder, extending in some cases along the urethra. But the negative symptoms of this anonymous disease are the most interesting. The functions of the skin are unimpaired. The pulse is not affected. There is no thirst nor craving for food, (except in severe cases.) The tongue is clean. The bowels regular. It has chiefly occurred to the author to observe it in persons free from gout, or any organic defect in the urinary organs. In every instance they applied for medical advice from the dread of its ending in something worse, rather than from actual suffering. The causes of this particular state of the urine are unknown. The author conjectures that whatever debilitates may lead to it. He has had no opportunity of ascertaining the progress of the disease, but he thinks it extremely probable that some may terminate in diabetes, and others in a deposition of the earthy phosphates. He recommends sedatives, and particularly opium, as "the only efficient remedies;" but by these he considers it probable that the disease may, in most instances, be suspended, if not altogether removed.

The third chapter treats of the very interesting subject of diabetes. We fully concur with the author in the necessity of confining this term to those affections in which the urine is saccharine. A vast number of diseases are accompanied by a

large flow of urine. Some of these are of a temporary and local nature; others are more permanent; and if these are all to be called *diabetes*, we may despair of ever improving the pathology or treatment of the formidable diseases to which that term does certainly more strictly apply. We do not think there is any thing very new in the author's observations concerning diabetes, but it is interesting and instructive to view this disease in conjunction with others with which it is liable to be confounded—to view it as one of a series, and not as that isolated complaint, in which light, as it appears to us, pathologists have hitherto been contented to view it.

The author is indebted to Dr. Watt, of Glasgow, for the detail of symptoms, and to Dr. Henry, of Manchester, for a very useful table pointing out the quantity of solid extract contained in urine of given specific gravities. To shew the value of this table, we may mention that we are at present in attendance on a diabetic patient, who passes ten pints of urine per day of the specific gravity 1.039 as determined by Mr. Faraday. By consulting this table, we perceive that he voids sixteen ounces of solid matter in twenty-four hours.

The observation of this case enables us to point out one peculiarity in the symptoms of diabetes, which Dr. Prout overlooks. He tells us that the taste of the urine is always decidedly saccharine, in a greater or less degree. Now in the case just mentioned, the saccharine taste was so obscured by urea and the saline principles (always present in diabetic urine though in diminished proportion) as not to be perceptible until the urine was concentrated to a considerable degree by evaporation.

Diabetes has been known, according to the author, to terminate in three ways; the first and most common is by pulmonic symptoms, accompanied by hectic fever; the second is by dropsy; while, in a few cases, the patient has been cut off suddenly. In investigating the pathology of diabetes, the first question that occurs is, whether the increase in the *quantity* of the urine is owing to its saccharine condition, or is dependent on some other cause. The author inclines to the idea that it is independent of the change of quality in the urine, and probably referable "to that irritable state of the system which forms a part of the disease, and which resembles that peculiar condition sometimes present in hysteria and other nervous affections, in which a large flow of limpid urine frequently takes place." (Page 65.) Some of the constitutional symptoms attendant on diabetes are, perhaps, owing to the saccharine condition of the urine, but many of the most distressing are more

probably referable to that enormous drainage from the system, both of solid and fluid matter, which takes place when the disease is severe.

The distinction between the increase in quantity and the alteration of quality in the urinary secretion occurring in diabetes, is stated (page 67) to be very important with reference to the operation of remedies. Animal diet affects (diminishes) the quantity, but we are not authorized to say, from observations yet made, that it improves the quality of the urine. "Blood-letting stands precisely in the same predicament." "I think, however," adds the author "that there are stronger grounds for presuming that blood-letting has improved the quality of the urine, than that animal diet has produced this change."

Long before Dr. Prout had written upon, or, perhaps, directed much of his attention to, the disordered conditions of the urinary secretion, opium had been recommended for the cure of diabetes; and this is considered by the author as affording some countenance to his view of the disease. He tells us (page 76) that "we have abundant proofs of the power which opium possesses of effecting changes in the urine which appear to be of a curative nature." He agrees with a late writer on the subject, Dr. Elliotson, in thinking that the three remedies, animal diet, blood-letting, and opium, do not interfere with each other; and he coincides in the recommendation of having recourse to them conjointly. Now really we are at a loss to understand this system of blowing hot and cold with the same breath. That bleeding may be adapted for one patient, and animal diet for another, we can readily believe; nay, we shall find no difficulty in seeing how they may be employed with advantage in the same individual in different stages of the complaint; but that they can be mutually serviceable at the same instant of time, is what we cannot comprehend. If they can be made so in diabetes, we do not see why they should not be united with equal advantage in the treatment of pneumonia.

By way of conclusion to the first section of the work, the author points out the analogy subsisting between the three morbid conditions of the urine already noticed; and attempts to shew that the bond of connexion between them is a kind of *hysteric* irritability of the system. He thinks it probable that in some instances they gradually run into each other, or into a fourth state of disease closely allied to the same class, to which, in a strictly natural arrangement, he should next have proceeded, viz. *the deposition of the earthy phosphates.* For

particular reasons, however, he separates their consideration; but as we are not tied down by the same necessity, and as our chief object is to illustrate principles of pathology, we shall here briefly notice the author's very ingenious ideas concerning the deposition of the phosphates. To use his own language, we shall sketch an outline of the *phosphatic diathesis.* (Chap. 5. Sect. 2.)

It consists in a suspended or diminished action of the usual acidifying powers of the kidney, whereby, instead of lithic acid, a greater quantity of urea (equivalent to ammonia) lime and magnesia is generated. This condition of the urine is very commonly dependent upon a deranged state of the chylopoietic viscera; frequently, too, it is connected with a great degree of *irritability* and *debility* of the system. Hence it is that children are so liable to this form of deposite, from their extreme irritability, and great tendency to disorders of the stomach and bowels.

The deposition of the phosphates is attended with uneasiness about the loins, a sallow, haggard countenance, black, clay-coloured, or yeasty stools, and subsequently great languor and debility, as in diabetes. The urine too here, as in the diseases already treated of, is pale, and secreted in larger quantity than natural, but it is commonly of very low specific gravity, such as 1.002. When the specific gravity is greater than this, the phosphatic sediment is proportionably more copious. In this state of disease the urine is very prone to decomposition. It speedily emits a nauseous smell from the evolution of ammonia. The relation between this state of disease and the three formerly noticed, is considered to be established by these points of analogy. But to understand the full scope of the author's views regarding the deposition of the phosphates, it is necessary for us to go back to the commencement of the second section, in which those diseases are treated of, characterized by derangement, either in point of quantity or quality, of principles *insoluble in the urine.*

The first chapter gives a general description of the mechanical deposites which take place from urine, either within or without the body. They are of three kinds:—1. The pulverulent or amorphous sediments; 2. Crystaline sediments, usually denominated gravel; and 3. Solid concretions, or calculi, formed by the aggregation of these sediments. A summary account is given of the varieties of urinary gravel and calculi, with their chemical composition, chiefly extracted from Dr. Marcet's excellent essay "On the Chemical History and Medical Treatment of Calculous Disorders;" but as our readers

must have been made familiar with this branch of the enquiry by many recent publications, we pass it over in order to afford more space for subjects less generally known.

The second chapter is a very interesting one. It is occupied with data, derived from the examination of different collections, shewing the comparative prevalence of the different forms of urinary deposite, and the order of their succession. Upon these data are founded a series of observations illustrative of the general pathology of calculous disorders.

In common with all writers on this subject, Dr. Prout lays great stress on the universality of the lithic acid, either as the nucleus or as the body of the calculus; but he says, that it is by the examination of the *alternating calculi* that a true notion is to be formed of the pathology of this disease. He investigates the *modes of transition*, by observing the different layers in contact with each other, and appears to us to have arrived, in this way, at some very important results.

The transition from the formation of lithic acid to the deposition of the phosphates is most interesting and instructive. It takes place gradually through the lithate of ammonia, and is accompanied by the disappearance of the usual colouring principle from the urine. The transition from the mulberry calculus to the phosphates takes place through a mixture of oxalate and carbonate of lime. The next layers are found to consist of the carbonate and phosphate of lime, and still farther from the centre, the carbonate of lime disappears. The author is inclined to believe, that wherever the change takes place *ex abrupto*, it is presumable that some time must have elapsed between the deposition of the different matters. It is a curious and important feature in the pathology of the urinary system, that a *decided* deposition of the phosphates is never followed by a different deposite. The author evidently distrusts altogether the existence of what have been called compound calculi—that is, calculi where different ingredients are intimately mixed. A comparison of the different varieties of calculi shews that there are three primary and essential distinctions among them, and these the author next treats of under the denomination of the three forms of calculus diathesis. He calls them (rather quaintly to be sure) the lithic acid diathesis, the mulberry diathesis, and the phosphatic diathesis; and a separate chapter is allotted to the consideration of each.

*Lithic acid diathesis.*—Lithic acid is separated from the urine in two forms, amorphous and crystalized—in common language, as *sediment*, or as *gravel*. In the first form it is in

combination with ammonia; in the second, pure. An excess of lithic acid in the urine arises from simple errors in diet, unusual exercise, or any debilitating circumstances. The speculations in which the author indulges, as to the manner in which these causes act, do not appear to us very satisfactory. The important principle seems to be this; that, if *imperfectly assimilated, unnaturally albuminous* matter is brought to the kidney, it does, and must in virtue of its natural action, convert such imperfect albumen into lithate of ammonia.

Dr. Prout divides the *sediments* of urine into three classes: the yellow, the red, and the pink; and attaches to this a much higher degree of importance than we are inclined to think it merits. The circumstances that chiefly struck us as worthy of notice are the following:—The yellow sediments consist of the lithate of ammonia tinged by the colouring principle of the urine. They are the sediments of health, or of the slighter forms of dyspepsia. Some persons are far more liable to them than others; and this denotes a tendency in such constitutions to an *excess of lithic acid and its consequences.* Red or lateritious sediments consist of the same matter tinged partly by the colouring principle of the urine, and partly by the *purpurates* of soda and ammonia. They occur in persons of a feverish irritable habit, and in such, are excitable by trifling causes. They may be observed also in gout, rheumatism, and hepatic affections. Pink sediments are characterized by being coloured *wholly* by the purpurate of ammonia. The presence of the purpurates is a never failing test of the presence of feverish or inflammatory action. Pink sediments accordingly occur in all inflammations, but they appear also in a very pure form in hectic fever, chronic liver disease, and frequently in dropsy. Sediments in the urine properly belong to the sweating stage of fever. They point out that fever has existed and is going off, rather than its actual presence.

The pathology of *gravel* next comes under consideration. After a good detail of the symptoms attending a fit of the gravel, the author proceeds to notice the circumstances under which crystalized deposites take place from the urine, and he observes that they are of two general descriptions, *natural* and *acquired.* The tendency to them is not unfrequently hereditary. " On the other hand, the disposition to generate these sediments in excess is, like gout, or rather simultaneously with gout, but too frequently acquired by indolent habits, and excess in eating and drinking. It is connected also with certain unknown causes, by which it becomes endemic in certain districts, " as for example, that of which Norwich may be consi-

dered as the centre, in which more calculous cases occur, than in the whole of Ireland or Scotland". Lastly, we are informed that renal calculi are sometimes owing to organic disease of the kidney, or parts connected with it. (Pages 130 and 183.)

After a few remarks on the prognosis in this form of disease, the treatment proper to be pursued, where a lithic acid diathesis prevails, comes under consideration. Errors in diet are of course to be chiefly guarded against, but we are warned that errors in *quantity* are of infinitely more importance than errors in *quality*. Where a strong disposition exists to the fomation of gravel, alkalis are indicated, "*but they are seldom or never to be given alone.*"

"To be really useful," adds our author, "they must be conjoined with alteratives and purgatives. The pil. submur. hydrarg. comp. or a pill composed of the pil. hydrarg. and antimonial powder, taken at night, and followed up the next morning with a solution of Rochelle salts and carb. of soda in a bitter infusion, may be had recourse to. A little of the same mixture may be taken two or three times a day, so as to keep the bowels fairly open; or, instead of this, a little magnesia may be had in a glass of soda water, or as often as it may be found necessary. This plan may be persisted in for a considerable length of time, according to the severity and obstinacy of the symptoms; the alterative pilt being gradually had recourse to at longer intervals, and the doses of the other medicines diminished in a corresponding manner." P. 140.

In a fit of the gravel we are directed to begin by the employment of febrifuge means, before recourse is had to stimulating diuretics; the author having seen great mischief done by a contrary system, "the sufferings of the patient aggravated, and even his life placed in extreme danger." (Page 114.) If the case is very obstinate, or suspected to be accompanied by some local disease of the kidney, we are advised to apply a galbanum plaster to the loins, or to insert an issue or seaton.

The fourth chapter is chiefly dedicated to the *mulberry* diathesis. Our knowledge concerning it is small, but the author conjectures—I. That the formation of oxalate of lime by the kidney is connected with a distinct diathesis *excluding the existence of other diathesis.* 2. That this mulberry diathesis is of the same *general nature* as the lithic acid diathesis. 3. That oxalic acid is here generated instead of lithic acid; and that it is actually secreted by the kidney, and not formed there, as some have conjectured, by the agency of nitric acid.

Calculi, composed of the cystic oxyd, are rare, but always exceedingly pure. Hence the author conjectures that the

*cystic diathesis* is more exclusive than any other, and that it does not readily *pass* into any other.

We have already alluded to some of the author's ideas regarding the *phosphatic*, or earthy diathesis. On this subject he is certainly at variance with most of our approved writers on calculus. One of the principal points of difference between him and them, (more particularly Dr. Marcet and Mr. Brande) seems to be this:—The latter have long taught us that a tendency to phosphatic deposition is given by a long course of alkaline medicine, and this opinion, we are quite satisfied, has done far more to sway the practice of the present day in gravellish complaints, than any other we could name. Now upon this Dr. Prout lays no stress at all. He allows that in a few cases it may occur, but as a general principle in the pathology of earthy depositions from the urine, he considers it of no importance whatever. The real causes of this state of disease are, he says, either local or general. A large proportion of the cases are owing to some injury of the back. It is an old observation, that such injuries produce alkaline urine. Excessive fatigue, severe and protracted debilitating passions, are among the other general causes of the affection. *Its principal local causes are irritations about the bladder or urethra, especially when operating for a considerable length of time.* This appears to be the leading feature in Dr. Prout's views of the phosphatic diathesis. It is certainly deserving of remark, that the same view of the subject had long ago been taken by Mr. Murray Forbes, who expressly states, that "when a foreign body gets into the bladder, *it would operate by irritation*, so as to occasion a redundancy of the phosphates."

Phosphatic deposites from the urine are sometimes amorphous, sometimes crystalized. One of the characteristics of this diathesis is, that the urine, on standing for a short time, exhibits the appearance of an iridescent pellicle, consisting of minute crystals of the triple phosphate.

In such a condition of the urine, the indications of cure are—1, to lessen the irritability of the system by narcotics, and especially by *opium*, in large and repeated doses; 2, to restore the general health by tonic, and other appropriate remedies. He particularly recommends the mineral acids, uva ursi, bark, and chalybeates. Purgatives, he says, should here be used *with great caution*, except in children, and those slighter cases where the strength of the system is not much diminished. This may be judged of, by the specific gravity of the urine being in such cases comparatively high.

"In mild incipient cases, I have seen the greatest advantage from the combined use of the muriatic acid, hyosciamus, and uva ursi; conjoined with the use of alterative purgatives." 162.

In opposition to the French writers, Dr. Prout is not disposed to lay any great stress on *diet* in a case of phosphatic diathesis. He considers the quiet of mind of the patient of far more consequence, and urges forcibly that

"Absence from care, the exhilarating air of the country, and such exercises as are consistent with the patient's condition, will, perhaps, more than any thing else, contribute to the cure, particularly in the slighter cases, and when the cause is not local injury." 163.

The next subject which engages the attention of the author is that of calculi, considered in a *mechanical* point of view;—that is to say, with reference to their modes of formation and subsequent increase, the symptoms which they produce as solid foreign bodies in the different urinary passages, and the medical treatment to be adopted when they are lodged in different situations.

We are not much pleased with the laboured theory which the author throws out in page 182, to account for the first formation of renal calculi, whether lithic or mulberry. His idea is that they are thrown out in a plastic *hydrated* state, but we cannot avoid expressing our persuasion that this speculation is unnecessary. It does not appear to us to add any thing to general pathology, and it is clearly inapplicable to practice. After noticing the treatment to be pursued in a case of renal calculus, the author is led to consider the growth of the stone, when in the bladder; and here we were struck by an observation which appears to us very questionable. We are told, (Page 195) that the *laminated* structure of calculi shews that their formation has been interrupted—in other words, that it has taken place at distant intervals; for, adds the author, if a calculus was constantly increasing, its texture should be homogeneous. He afterwards compares the structure of a calculus to that of an onion. Does he suppose that the concentric laminæ, which that bulb exhibits, prove "that they were formed at different periods, separated by longer or shorter intervals?"

Whatever may have been the previous nature of the calculus, the *phosphatic diathesis always prevails whenever the patient's general health gives way.* The coats of the bladder then become thickened and diseased, and often, he might have

added, disorganization of the kidney itself takes place, and death closes the scene.

The *local* treatment of calculi is nearly the same in all the species, consisting principally in the employment of anodynes. "Hyosciamus is in general to be preferred in the lithic acid diathesis, and opium in the phosphatic." (Page 202.) This is urged in consequence of the author's having noticed, that "opium frequently increases the formation of the lithic acid," (page 177) an observation which we think of great importance, considering his extensive recommendation of this remedy in the diseases of the urinary system.

The *general* treatment depends, of course, upon the nature of the diathesis which is present; and it may be understood from what has been already stated. It is important to bear in mind, that while the urine is in its natural state, *the calculus cannot increase in size.* When, therefore, the diathesis, more particularly the lithic diathesis, has been broken in upon by medicine, the effect is to be kept up by strict attention to diet and regimen, and the patient may live on, scarcely knowing that he has a calculus in the bladder.

In the cure of a calculus composed of the phosphates—

"It should be our object, as in all other affections of this description, to restore the urine as speedily as possible to its natural state. I am sorry, however, to be obliged to confess that I have never been able to accomplish this purpose in a single instance, even after the most fair and persevering trial of almost every remedy that has hitherto been recommended, or that I could devise as likely to effect my purpose. The consequence has been, that I have never been able to procure more than a temporary relief from suffering by the various exhibition of opiates, &c. The operation of lithotomy, therefore, seems to be the only alternative in this form of the disease. If, however, the case is doubtful, or the patient refuses it, or his situation will not admit of the performance of the operation, recourse may be had to the means formerly pointed out when the nature of this diathesis was treated of in detail." 206

The last chapter contains a number of valuable observations on the influence which periods of life, sex, and climate, exert over calculous complaints; on the mortality attending lithotomy, and the circumstances *of a general nature*, which should incline us to recommend, or to dissuade from, that operation. We have occupied so much space with the author's general views, that we have really no room to spare for the details into which we should be led by a full analysis of this chapter. There are two or three remarks, however, which we noted

down as particularly interesting, for which we must endeavour to find a place.

Dr. Prout seems to think (page 211) that a large proportion, perhaps the majority, of lithic acid calculi are formed in *very early life;* and that no urgent symptoms are occasioned by them till towards the age of forty.

"The hey-day of life has now past; the individual has perhaps been married for some years, and, from being less active, has become corpulent and gouty; for some time past the irritation in the bladder has been more frequent and urgent, and he observes that his urine is loaded with gravel; he now begins to take the alarm, and to be apprehensive that his complaint may terminate in stone; a surgeon is consulted, who confirms his apprehensions: and here begins the tale of woe; his new disease haunts *him* perpetually, and soon begins to affect his health and spirits; at length his constitution gives way—an irritable state of the system comes on—the phosphatic diathesis is induced, and a cruel operation, or a miserable death, is the only alternative." 213.

The phosphatic diathesis occurs sometimes as an original disease in the prime of life, without being preceded by the lithic acid, or any other diathesis. (P. 215.) Calculus is less frequent at present than it was formerly. (Page 216.)

The operation of lithotomy is to be recommended without delay, whenever a calculus, no matter of what species, is ascertained to exist in the bladder before puberty—where the phosphatic diathesis is formed—and, lastly, when the urine is loaded with pale-coloured lithate of ammonia; for in this case the phosphatic diathesis cannot be prevented, nor the lithci diathesis restored. On the other hand, the operation may be postponed, when the calculus is small and the lithic diathesis *steadily present*—when the patient is in the prime of life and the health sound, and where he is willing to conform to regular living. Under all other circumstances the retention of the calculus in the bladder is dangerous.

Before parting with Dr. Prout, we must offer him our thanks for the instruction which he has afforded us; and, *for his sake*, express our hopes, that we may have been successful in conveying to our readers a clear and impartial idea of the views which he has formed of the deranged operation of the urinary organs.

*Codex Medicamentarius, sive Pharmacopœia Gallica, jussu Regis opitmi, et ex mandato summi rerum internarum administri, editus a Facultate Medica Parisiensi, Anno* 1818. Paris, Hacquart.

(From the London Quarterly Journal of Foreign Medicine and Surgery.)

A CONSIDERABLE interval of time having elapsed since the publication of the immediately preceding edition of the Paris Pharmacopœia, the announcement of this edition excited considerable expectation, not more from the length of time which had been devoted to its compilation, than from the number and celebrity of the persons employed in the undertaking; for among others of scarcely inferior note, we find Jussieu, Vauquelin, Hallé, and La Grange, contributing by their labours to its perfection, and by their names to its celebrity. It is reported, that the French Government expended a considerable sum in the remuneration of the individuals employed, and as if that the magnitude of the work should keep pace with the actual expence incurred, it is protracted beyond 600 quarto pages, containing, to use the words of the prefacer, "Quasi Pharmacopœiæ universalis Specimen."

It is divided into ten sections, each of which is subdivided into a number of heads or articles:—

1. Preparationes Medicamentorum Simplicium et Cautelæ Pharmaceuticæ.—This contains the heads—Delectus, Exsiccatio, Asservatio, et Renovatio, Purgatio et Mundatio, Dispositio et Aptatio, in Pulverem Resolutio.
2. Materiae e simplicibus integris elementis purum immutatis depromptæ—such as Succi expressi, Fæculæ, Olea expressa pulpæ, Serum lactis.
3. Materiæ e simplicibus fermentando evolutæ.—This section contains only one article, Vinum ex hydromelite.
4. Materiæ e simplicibus distillando evolutæ—as, Aquæ stillatæ, Olea volatilia odorata, Alcool et Alcoolata, Sales et Olea volatilio pyrogenæa.
5. Solutiones Medicamentorum variis liquidis paratæ—Under this are as many articles as there are liquids employed as vehicles—for instance, Solutiones paratæ cum Aqua, Vino, Cerevisia, Aceto, Oleis, Alcoole, Æthere, Varii Liquidis cum Saccharo aut Melle.
6. Materiæ e solutionibus inspissando extractæ, as, Mucagines, Gelatinæ, Extracta Resinæ.
7. Medicamenta per Analysim Chemicam e corporibus elicita

—these are, Acida, Alkalia, Subcarbonates-Alkalini, Metalla, Oxyda Metallica, Sulphur, Phosphorus, Carbones.

8. Medicamenta per synthesim ex unitis chemicam affinitatem elementis composita. These are, Ætheres, Acida alcoolisata, Sales, Sulphureta, Saponès, Aquæ Minerales arte factæ.
9. Medicamenta ex mistis tantum simplicibus ad usum præcipue internum, Species, Pulveres compositi, Masse molliores, Conservæ, Tabellæ, Electuaria et Opiata, Pilulæ, Boli.
10. Medicamenta mistione aut forma ad usum externum præcipue destinata—Cataplasmata, Fomenta, Collyrin, Linimenta cerata, Adipes medicati, Unguenta oleoso-resinata, Unguenta solida et Emplastra, Telæ medicatæ et cereoli, Glandes suppositoriæ, Escharotica et Catheretica, Suffumigationes.

To a good division, one of the chief requisites is, that the parts be distinct, a law which we do not think has been observed in this instance; for a great part of the fourth is contained, or at least, according to the title of the section, *can be* contained in the second. It is evident, for example, that the odorous particles of a plant, the volatile oil, may be extracted, in general, with as little or even less change of structure, either mechanical or chemical in the subject, as expressed oils or other substances, which are placed under the second section. It appears also, that a very sound objection may be urged against the title of the fourth section; namely, the inference it conveys, that the process of distillation performs the same part in all the preparations contained in that section—an assertion which is not likely to be granted by any one who considers that the distillation of alcohol, &c. is nothing more than a separating process, while in cases of pyrogenous salts and oils, a real chemical action and new arrangement of particles take place. The third section, containing but one article, seems unworthy of a place as a distinct section. In the present state of chemical science, we should have expected that the term Solutiones, occurring in the title of the fifth section, should not have been employed in so vague a sense; for, under that head are contained compounds which are mere mechanical mixtures or suspensions, and certainly ought not to be named solutions.

To the body of the work is prefixed a catalogue of Materia Medica, together with tables of weights, specific gravities, and temperatures. In the catalogue, the substances are divided into the mineral, the vegetable, and the animal kingdoms.

Under each of these, the articles are arranged in alphabetical order, the nomenclature seems to be conducted with great care, and the names are derived from the botanical, zoological, and mineralogical works of the greatest estimation. Nor do the compilers confine themselves to one name for an article, but add also the synonyms from the best authors, annexing the name of the writer from whom they have borrowed them. This we concieve a most useful precaution, since many substances of high medicinal importance are differently named by different authors, a circumstance which tends no doubt to endanger the distinctness and order which ought to prevail in matters of so much consequence.

Amongst the changes which have been made in the nomenclature, and which are entitled to our utmost deference when we reflect upon the pretensions of the individual who may be considered as more particularly presiding over the botanical part of the work, we recognize the revival of some of the old epithets which had fallen into disuse. The name *Conium Maculatum*, which has, in our Pharmacopœia, for some time superseded the familiar term *Cicuta*, is by the authority of Jussieu deposed, and the latter name restored; so also the *Anthemis Nobilis* has resigned its pretensions, and the vulgar term *Chamæmelum* is reinstated in its rights.* The part of the plant which is officinal is in many instances noticed, and characters are superadded, by which the genuineness and purity of the substances forming the Materia Medica may be ascertained.

The first thing which strikes us in this list, is the great diminution which has taken place in that branch of it which is derived from the animal and mineral kingdoms. Instead of all those numerous specimens of minerals and precious stones, which (if we suppose the directions of the former edition of the Codex to have been observed) converted the shop of the apothecary into a museum of the mineralogists, we can now scarcely discover any thing the utility of which is not universally acknowledged, and we find very few articles which are not admitted into the British officinal lists; gold, bismuth, and caustic soda are among the exceptions. Prussiate of mercury is amongst those which are admitted into the Parisian Codex, though as yet excluded from the Pharmacopœiæ of these countries. In the animal division, the retrenchment, though not so perfect, is nevertheless deserving of commen-

* The species of Aconitum used in these countries retains the name "Napellus" by the sanction of the same authority, though some have supposed that it is the Aconitum Neomontanum which has always been intended.

dation; for although we still meet in the new list a few articles which have long since been rejected from the British Pharmacopœiae, yet their number is so small, and the prejudices of the vulgar in favour of old remedies so strong, that it is difficult to condemn the caution which has led to their retention, although, to say the truth, they seem better adapted to the "carte" of the "restaurateur," than to the officinal list of the apothecary, upon whose hands it appears to us that the compilers have already heaped a sufficient share of labour without monopolizing to him the preparation of several articles which ought to be regarded as culinary. For instance, minute directions are given for preparing broths from different animals, such as crabs, chickens, turtle, veal, frogs, snails, &c.—directions which might with greater propriety find a place in the "Housewife's Receipt book," than in the Codex Medicamentarius.

We are happy to observe that, in excluding the articles Oniscus, Ostræa, and some others, the compilers of the latest editions of the London Pharmacopœia have put nearly the finishing hand to its complete reformation. We wish those of the Codex had followed their example.

We should have expected that this reformation, or exclusion, would have been extended to the vegetable list, but the very reverse we find to be the case. Instead of having in the slightest degree endeavoured to curtail that formidable list—instead of having thought it worth their while to conform to the opinions entertained by the Colleges of Physicians in these countries, who, daring to shake off the trammels of custom, have not hesitated to disencumber their Pharmacopœiæ of those substances to which the ages of ignorance and superstition had attributed effects scarcely less than miraculous, they have actually increased the number of vegetable articles far beyond what it was in the preceding Codex, including in it many which are either totally inactive, or certainly have no just claim for admission. Not content with introducing many plants of different genera, they have either retained, or in many instances have introduced, numerous different species of the same genus, which, from their similarity of nature, ought to have been dispensed with. Thus we find that the materia medica of the Codex includes no less than fifteen species of artemisia, ten of rumex, ten of euphorbia, nine of mentha, eightof lichen, eight of teucrium, six of rosa, six of geranium, six of achillæa, five of aristolochia, five of quercus, five of chenopodium, five of brassica, five or six of veronica, with so many species, that to

enumerate them all would occupy more time and labour than most of the articles are worth. It is in this manner they have spun out their vegetable materia medica to an extent four times greater than the extent of the British lists.

For this they have offered two plausible, yet, in our opinion, inadequate reasons. They say they have retained or introduced all these substances, first, in order that they who read the works of ancient or foreign authors, may be acquainted with the remedies to which such writers allude; and secondly, because the estimation of some medicines undergoes a temporary fluctuation; therefore, in omitting any of those which at present are little valued, they would leave out of their catalogue remedies which may, in a very short time, attain a deserved celebrity.

The first of these is an argument for noticing such substances in a commentary on materia medica, but by no means a reason for introducing them into the number of those which are to be considered as bearing the stamp of approbation, and which the apothecary is required to have at hand, and that perhaps at no inconsiderable expense.

To the second it may be answered, that we do not object to the retention of those substances which have at any time been considered as having a fair claim to notice, or of those the efficacy of which is at present doubtful, upon which experience has not yet finally placed the seal, and concerning the qualities of which "adhuc sub judice lis est." They may quiet their fears as to the fate of such medicines, by the reflection, that where they are really of intrinsic value, they will not be forgotten, even though not at present to be found in a list of materia medica.

By increasing the number of simples to the enormous extent to which it has stretched in the Codex, what do we but increase the temptation to violate the rules laid down, or to adulterate those substances which it ought to be our greatest care to preserve in a state of purity? In justice to the exertions of the compilers, we must give them credit for the complete attainment of the end which they proposed to themselves, when they determined (to use their own words,) "superfluitatem maluimus quam inopiam."

While we deprecate the introduction, or retention, of many of the articles which are to be met with in the pages of the Codex, we are nevertheless willing to acknowledge that several others are to be found, which, though not at present admitted into the Pharmacopœiae of these countries, are really of consequence. The authors, have, in an appendix to the

work, inserted those very active remedies which the improvements lately made in chemistry, particularly the vegetable branch of it, have placed in our hands. We allude to morphina, and hydrocyanic (formerly prussic) acid. These medicines, though of a nature so active as perhaps to be considered scarcely admissible in medicine, are yet so far entitled to consideration, from the celebrity of the practitioners who have advised their exhibition, that we cannot blame their introduction into the Pharmacopœia, although perhaps it might have been wiser to have deferred it until their claims should have been more fully established. We perceive that they have likewise retained the very active drug, nux vomica, together with two other species of strychnos, the S. Ignatii, which is the ignatia amara of Linnæus, and yields the article known under the title of St. Ignatius's bean, an agent scarcely inferior to the former in activity. The third is the strychnos colubrina.

They direct three species of veratrum and four of helleborus, two of which, the h. niger and the h. fœtidus, have a place in British Pharmacopœiæ; the others are the h. viridis and the h. orientalis: the latter is the hellebore of the ancients, and is to be considered as a revived article, as we do not find it in the preceding Codex.

They admit five species of Cinchona, as furnishing the different kinds of Peruvian bark used in medicine. The 1. Cinchona officinalis; 2. Cinchona ovalifolia; 3. Cinchona lancifolia; 4. Cinchona cordifolia; and Cinchona oblongifolia. The specific names of all except the first are taken from Mutis. The three latter are those recognised in the London Pharmacopœiæ os officinal species, the third affording the variety known by the name of pale bark, the fourth yielding the yellow, and the fifth the red. It is probable that the five species are indiscriminately used; the first (officinalis) seems to be the source of quill bark.

The cinchona caribæa of the Edinburgh list is synonymous with the exostema caribæa of the Codex, a title which it has borrowed from M. Bonpland. The compilers pronounce with great confidence on the true source of the ipecacuan used in medicine: their opinion, since it somewhat differs from that which is entertained by some writers, we shall here offer. According to them there are to be met with in pharmacy, three kinds of ipecacuan. One of these is, however, of comparatively rare occurrence: the two others are not (though differing in colour) derived from different plants, they are nothing more than varieties of the same root—the root of the cephaelis of

Brazil, the callicocca of Brotero. They agree therefore with all the British Pharmacopœiæ in the source to which they attribute the article, but they differ from those writers who, resting probably on the authority of Mutis, declare these two roots to be of different species, or at least to be inhabitants of different countries. The third and less used species they derive from the psychotria emetica. Of this they give the following description:—Its root (the officinal part) is thicker than that of the cephaelis; it is smooth externally, while that of the latter is rough; it is not annulated, but every where indented only with circular furrows distant from each other (sulis tantum circinatis, distantibus passim exarata), whereas the root of the cephaelis is divided as it were into short, or rather narrow rings by numerous transverse fissures (fissuris numerosis transversis quasi in annulos breves secto;) so that, say they, there is always this difference between ipecacuan, whether light or dark coloured, from the cephaelis and from the psychotria, that the former is annulated, the latter is not.

It must be confessed that the terms in which the descriptions are couched, do not appear sufficiently precise to convey this idea. In order rightly to understand the difference between them it is necessary to hold in mind the opposition between the terms, "fissuris" and "sulis tantum;" by the former are intended profound, and by the latter superficial divisions. There is a fourth kind of ipecacuan mentioned in the Codex, which, on account of its inactivity, is very rarely applied to medical purposes; it is called, on account of its colour, white ipecacuan, and is derived from the ionidium ipecacuanha, which is synonymous with the viola ipecacuanha of the younger Linnæus. The piper cubeba, a remedy which has lately attained some character in the treatment of gonorrhœa, is admitted into the Codex.

Among the resins, balsams, gums, and gum-resins, we find some in this work which we do not meet with in the British Pharmacopœiæ; for instance, among the resins, lac from the croton lacciferum, chibon from the bursera guttæfera, ladanum from the cistus creticus, the tacamacha from the tagura octandra, the resin of the hymena conbaril, cout-chouc (elastic gum as it is improperly called) from the siphonia cahucha and copal from the vateria indica of Linnnæus, the elaocarpus copal-liferus of Wildenow.

Among the balsams are the balsamum mariæ seu viride from the calophyllum inophyllum, the carpatum from the pinus cembra, and the styrax liquida from the liquidambar styracifluum.

Only one gum appears in the Codex which is not used in these countries; the gum acaju, derived from the cassuvium occidentale, which is identical with the anacardium occidentale of Linnæus.

Among the very few gum-resins which occur in the Codex, beyond those in the British Pharmacopœiæ a conspicuous place is held by the articles bdellium and caranna, both of uncertain origin. The authors admit a fourfold origin of the gum-resin aloes: the aloe perfoliata, aloe elongata, aloe spicata, aloe linguiformis. They do not attempt to decide the question, whether the different kinds of aloes, the socotorina, hepatica, and caballina, are the products of different species of aloe, or of one and the same, the difference of their properties depending on the mode of preparation. If we are to credit the Codex, only one of these kinds, the socotorina, is used in medicine; for the caballina is almost entirely banished from the shops, and the hepatic is, to use their own expression, "Usus tantum inter veterinarios," which strikes us with the greater surprise, inasmuch as this very species is in these countries, in many instances, preferred to the more expensive, the socotorina.

It is somewhat extraordinary, that in the next branch of the work the compilers have disdained to be guarded by the vulgar prejudices which they profess to have observed in the former, and, that contemning the ideal difficulties which arise from a change in the metrical system, they have not hesitated to adopt the most approved modes of determining the quantities of bodies; while, however, they retained this object in view, they have not entirely neglected the ancient modes of mensuration, since they refer to the old weights in all their compound formulæ, in addition to the terms of the system which they recommend.

It is well known to our readers, that the weights and measures used in France have within the lapse of a few years undergone a total revolution, being now referred to a standard quite different from that formerly used. The compilers have, therefore, with great propriety taken into consideration the necessity of conforming to these changes, but at the same time they have seen the utility of rendering the alteration as slight as possible. Therefore, in the prescription of formulæ, they have determined to make use of general abstract numbers, expressive of the relative quantities of the ingredients; nevertheless, they have by no means neglected the absolute weights, since they have proportioned these numbers so as to represent them according to either system by approximation. Thus

that which at first sight seems so difficult, namely, to reconcile the two systems, we find accomplished in the neatest and most effectual manner, and thus are the formulæ of the Codex adapted not only to the French but to the foreign, not only to the ancient but to the modern modes of mensuration.

For the unit of the scale they have chosen a gramme, because one dram (of the old system) is equal to 3.82 grammes, that is, it is very nearly equal to 4 grammes; therefore the number 4 represents one dram or four grammes, therefore 1 represents a gramme. An ounce, consisting of eight drams, is expressed by $4 \times 8 = 32$, two ounces by 64, three by 96, and so on until they come to the half pound (eight ounces), when neglecting lesser quantities they retain only round numbers; for instance, the half pound, which ought to be represented by $256 = 8 \times 32$, they express by 250: one pound, which ought to be $512 = 16 \times 32$, they call 500: two pounds, 1000, and so on; and all quantities above the half pound are multiples, not of 32 (the original ounce), but of 250, the half pound: hence it appears, that for every thing above the half dram the general number of the Codex will be greater than the real number representing the grammes contained in the given weight. One dram = 3.82 of a gramme; 20 grains = 1.062. This quantity they represent by the integer 1, therefore here the general number is less than the real, and since the series is carried downwards by a decimal division, consequently it will always continue to be less; an arrangement the more useful, as the medicines which are so minutely divided are of a very active nature, and by these means is obviated the chance of their being, through mistake or ignorance of the accurate value of the terms of the series, prescribed or taken in a dose greater than ordinary. For instance, if it were intended to prescribe any active remedy (suppose digitalis) in a dose of one grain, following the system of the Codex we should direct, digitalis .05; whereas, the real value of one grain is .0531, a decimal evidently superior to .05, therefore we should actually in this case order somewhat less than one grain. The reason of omitting the units after we come to the half pound, is in order to facilitate the calculation; by this step we do not materially affect the relative strength of the compound, since such high weights or measures are generally made use of in directing the quantities of ingredients in what are called by the compilers solutions, where the active substance bears but a small proportion to the whole mixture.

They have annexed two tables, one explaining the value of

each of the general numbers, either according to the new or the old methods; the other containing instructions for converting the new into the old weights. 500 grammes, according to this table, are equal to one pound, 2 drams, and 53.57 grains of the ancient system; but by an arrangement of the French government, the value of the pound has lately been altered, and instead of the above-mentioned value, it is settled, that hence-forward 500 grammes shall be equal to one pound. Hence, as the authors observe, a slight difficulty is likely to be thrown in the way of their arrangement. At all events, we must not withhold the applause to which they are justly entitled, from their efforts to reform a system which hitherto has been liable to many objections. In taking specific gravities, they make use of Baumé's or the Dutch Areometers, or both, and they conclude this part of the work, by subjoining a table, shewing the absolute weight of a drop of such fluids as are exhibited in doses of a certain number of drops, or a spoonful. This table likewise shews the weight of a handful or pinch of those substances which are accustomed to be measured out according to those standards, with several other particulars, which we have no hesitation in asserting to be highly advantageous or even necessary to the practical pharmaceutist.

The first section of the work, containing the heads above enumerated, viz. *Delectus*, *Exsiccatio*, &c. is one which deserves to form a part of our Pharmacopœia, for much of the virtue of vegetables depends on the time of collecting and drying them. The authors of the Codex deserve much credit for having prefixed to the prescriptive formulæ a section containing so much information as is to be found in this short artilce. The directions given, coincide nearly with the practice adopted in Britain; there are, indeed, one or two exceptions, not, however, of very great consequence. One is, in the case of the roots of annuals, which are with us usually collected in the spring, while the Codex directs that they should not be dug until the autumn. In the article Exsiccatio, an extremely neat method of preserving and drying the petals of violets is given. They are directed to be spread out on a cloth, the calyces, stamina, &c. having previously been removed, warm water is then sprinkled over them and allowed to filter off, whereby it attains a greenish colour. This is to be repeated three or four times, until the water passes through no longer tinged with green, but with a pale blue; the petals are then to be dried like those of other flowers. Violets prepared in this manner are peculiarly adapted for the preparation of the

syrup. To the drying of vegetables the French appear exceedingly attentive. We are directed in the Codex, when it may not be in our power to attain this object by the influence f the sun, to perform the operation in a chamber constructed for the purpose. This affords the double advantage of supplying the requisite degree of heat, and of placing it in our power to exclude the light—a circumstance well worthy of our attention, since there are few vegetable substances, (if any) which are capable of withstanding unchanged, the combined actions of heat and light. The article " In pulverum resolutio" is exceedingly complete, containing instructions on the mode of pulverising several substances, on which it is either tedious or difficult to perform this operation.

The second section, viz. *Materiæ e simplicibus integris Elementis parum immutates deprompte*, includes the heads, 1. *Succi expressi.* 2. *Fœcula.* 3. *Olea expressa.* 4. *Pulpæ.* 5. *Serum lactis.* Of the first we find no less than twenty-four instances. The compound juices seem peculiarly qualified to fulfil the object for which they are intended. One of these formulæ the succi dicti antiscorbutici, contains sysmebrium nasturtium, cochlearia armoracia, et menyanthes trifoliata. These are pounded together, and the juice expressed; the other (they are only two in number,) is succi temperantes et diuretici dicti. This is prepared from the lactuca sativa, rumex acetosa, chaerophyllum sativum et sempervium tectorum, treated in the same manner as the former. It is to be feared, that many of the expressed juices are perishable; nevertheless, there are some, which with proper precautions may be kept uninjured for months. The chief direction given for their preservation, is to put the juice into a flask, which is to be filled up to the neck; a stratum of oil of almonds is then poured on the surface. In one instance, that of the succus cydoniæ, we are directed to have recourse to a farther precaution, which is the fumigation with burning sulphur, of the flask destined for the reception of the juice, or to mix with the juice a small quantity of sulphite of lime, in the proportion of about fifteen grains to the quart measure. This appears an excellent form for the exhibition of such vegetable substances as are adapted to it provided the juice has been recently prepared; yet it must be acknowledged that serious objections may be made against the administration of active substances in this shape, if they have been for any length of time prepared. Is it not to be apprehended, that in this case they may undergo a fundamental alteration, by which their qualities may be either totally destroyed, or so far weakened as to disappoint the expectation

of the practitioner? To give an example, the juice of cicuta, by the slightest change of its constituent principles, may be so metamorphosed in its medicinal qualities as to become totally inert. We therefore do not approve of the plan of keeping it for any considerable time, as is directed in the Codex. If it cannot be prepared extemporaneously, it might with advantage be preserved in the form of an inspissated juice. The second article of this section, besides the fæcula alibilis solani tuberosi (an epithet by the bye totally inelegant), contains the fæculæ medicinales radici bryoniæ, radicis ari, radicis iridis, et seminum hypocastani. We expected here to have met with the fæcula of the momordica, or ecballium elaterium, as it is called in the Codex; it occurs, however, under the head of the extracts in the form strictly speaking of an inspissated juice. In the third head of this section, we meet with a rather extraordinary preparation, oleum de vitellis ovorum, procured by evaporating the mixed yolks of eggs to about one half; on subjecting them to pressure, we obtain the oil, which, in order to be had in a state of purity, is to be filtered through paper. The most striking property of this liquid is, that it dissolves ether in almost every proportion. Altogether, from the impossibility of keeping it long, and other circumstances, it appears rather a superfluous article. In this part of the work, directions are given for the preparation of several of the volatile oils by expressions among which are those of orange and lemon peel, of dill, carraway, and aniseeds, &c. This method where it can be practised, is certainly possessed of some advantages over that wherein we make use of heat for the separation of these oils from the substances in which they are contained; the operation is very simple. In order, for example, to procure the volatile oil of orange peel, it is only necessary to separate the rind, and subject it to pressure, the liquor which filters through, divides into two portions, one of which is the oil, the other consists chiefly of water, and is to be separated by the usual process. The term pulpæ of the Codex is not there applied in the same sense in which it is used with us; for it signifies not only what we understand by it, viz. the medullary parts of fruits, but it is also given to what might with greater propriety be termed a *mass*, composed of different ingredients pounded together. Such a composition is the pulpæ de plantibus emollientibus, formed by boiling for a short time in water the species emollientes, and when it is sufficiently soft, pounding it into a mass. The latter compound consists of the recent leaves of altheæ, malva, verbascum senecio et parietaria.

The heads into which the fourth section is divided, are, 1. Aquæ stillatitiæ. 2. Olea volatilia. 3. Alcool et Alcoolata. 4. Olea, et Sales volatilia pyrogenæa. The first head includes a most formidable list; no less than fifty distilled waters are directed: a number of which might undoubtedly be dispensed with, particularly as many of them scarcely differ from each other. The authors direct that in preparing distilled waters from plants sparingly odorous, the operation should be twice or thrice repeated, adding each time to the water which has already passed over, a fresh quantity of the plant, and redistilling the infusion. The propriety of this measure appears to us doubtful. In the list of these medicaments we discover the distilled waters of laurel leaves, and bitter almonds, preparations of hydrocyanic acid, comparatively weak indeed, but still of a nature so active and dangerous, that we may say of the person who first advised its introduction into medicine,

"Illi robur et æs triplex
"Circa pectus erat."

The number of volatile oils in the second article, is less than in the British Pharmacopœiæ. Among those which are proper to the Codex, are the olea volitilia de floribus aurantii, ocymi, salviæ, rosarum, tanaceti et thymis. We were rather surprised at not meeting under this head the oleum terebinthinæ. This is an omission which we scarcely deem pardonable. In the preparation of those oils which are heavier than water, we are directed to add to the mixture about to be distilled, about as much sea salt as shall be equal in weight to half the subject. With what view this addition is made we are ignorant, perhaps it is in order that the oil may float on the surface, and thence pass over before the water.

The third article Alcoolata is synonymous with the spirits of the British Pharmacopœiæ; it is divided into two heads, the alcoolata simplicia and the alcoolata composita. The former are only three in number, viz. A. de aurantiorum cortice, A. de cochlearia, et A. de rosmarino. It appears to us, that the authors deserve credit for rejecting from their Codex the long list of spiritus distillati, which are to be found in our Pharmacopœiæ. Their places may frequently be supplied by a tincture prepared from the same subject, which is in most instances directed, as well as the spirit.

Among the compound alcoolata, we may observe that the A. aromaticum ammoniale coincides nearly with the spiritus ammoniæ of the London Pharmacopœia. Both of them yield in elegance to the formulæ of the Edinburgh and Dublin Col-

leges, and both are as open as the Dublin formula to the objection urged against the latter by the author of the Edinburgh Dispensatory—an objection which appears more subtile than wellfounded. The alcoolata de cochleariis is a less complex, but at the same time a less elegant composition, corresponding with the spiritus raphani compositus of the London College; it is less palatable, as not containing any of the aromatics which enter into the latter. A few other compound spirits are annexed, which, though still exceedingly complex, have yet the merit of being much less so than the corresponding formulæ in the preceding edition of the work. In one of these, (the alcoolatum dictum vulnerarium) we find a retrenchment of no less than twenty-nine articles, the number of ingredients directed in the preceding edition for the preparation of this medicine being forty-two, while, according to the last, they amount only to thirteen, exclusive of the solvent. Had the authors swept away almost eight out of these thirteen, they had furnished a more rational formula. These ingredients are, salvia, angelica, tanacetum, artemisia, anethum, menthæ, hysoppus, thymus, anathemis, melissa, origanum valgare, origanum majorana, melissa lavandula. All these the authors do not consider as absolutely necessary; they have therefore designated by the italic character those which are indispensible, so that the remainder may be omitted, if it be inconvenient to insert them. This is a practice we cannot hesitate to condemn, thinking as we do, that no article in a Pharmaopœia should be compounded according to the arbitrary wish of any individual, or in any other manner than that there prescribed. To permit such a licence, is, in fact, to do away the entire utility to be derived from the use of Pharmaeopœiæ—a most material part of which is to ensure uniformity in the several compounds. In the above formula eight of the ingredients are judged unnecessary; in another instance, (the ale. de terebinth. comp.) out of sixteen materials which go to its composition, only four are considered indispensable: in a third, (the alcoolatum carminativum Sylvii) no more than five out of sixteen are noticed as necessary to the preparation. It is evident, that by this procedure, the authors accuse themselves of a neglect of duty in permitting the formulæ of their work to remain in a state of what they themselves consider unnecessary complexity. The two last preparations under this head, viz. the alcoolatum de melissa compositum, sive aqua carmelitarum, and the alcoolatum de citreis compositum, sive aqua colomensis, are more properly adapted to the laboratory of the perfumer than that of the apothecary. Under the fourth article, viz. the olea and

sales volatilia pyrogenæa, we are not a little surprised to meet the phosphat of lime, (os dictum cornu cervini). There is a manifest abuse of words in applying to this salt the term pyrogenæa.

The fifth section, *Solutiones Medicamentorium variis liquidis paratæ*, is divided into as many subsections as there are liquids used as vehicles for the administration of medicines. The first is *Solutiones aqua paratæ.* which is divided into three articles, 1. *Potus*, 2. *Misturæ*, and 3. *Jura.* By the first are intended solutions prepared by infusion, decoction, or maceration; by the second, solutions prepared from the ingredients by simple dilution or admixture, unassisted by any of the above processes; and by the third, solutions obtained by decoction from the flesh of animals, being precisely synonymous with the term broth in the English language. The article Potus is divided into three heads, viz—1. Ptisanæ, 2. Apozemata, 3. Haustus. The first are generally used as ordinary drink; the apozemata are never intended as an ordinary drink; and they are more saturated with the active principles of drugs than the ptisanæ; the third are usually intended for a single dose, and nearly coincide with the same medicines among us. Among the apozemata, we observe the decoctum kinæ-kinæ, nearly corresponding to our decoctum cinchonæ, except that it is only of half the strength, and contains further an addition of a small quantity of carbonate of potass, by which, as we are informed, a desirable point is gained; for thus the resinous particles which would otherwise have been deposited, are retained in solution; the decoctum guaiaci compositum coincides with the decoctum sarsaparillae compositum, of the Dublin College, and differs little from that of the London Pharmacopœia. *Misturæ* are divided into three kinds: 1. Emulsiones, 2. Potiones, 3. Eclegmata. The first term is used in the sense in which we understand it; by potiones are intended those medicines which approach most nearly to what we designate by the term mixtures; and the third is applied to a species of inert liquids, which serve principally for the purpose of bringing to a proper consistence masses intended for the preparation of boluses, &c. In the third article of this subsection, we find directions for preparing the following juscula: —viperinum, cum cancris fluviatilibus, pullo gallineceo, carne testudinum, carne and pulmone vitulinis, lacertis, ranis, &c. These are all prepared according to one formula, but the jusculum de limacibus is of such peculiar importance, that it has been judged necessary to give a separate prescription for its preparation. At the end of this head is introduced a table,

showing the solubility of ether, camphor, and some of the volatile oils.

The *Vina Medicata* is a good article. If we except the vinum opiatum fermentatione paratum, seu laudanum abbatis Rousseau, we shall find nothing contained under it which is not entitled to a place in the Pharmacopœia. We shall insert the formula according to which it is prepared, and put it to the judgment of our readers whether or not it ought to be retained in use in the present state of chemical and medical knowledge.

Take of white honey, 12 ounces; warm water, 3 pounds: dissolve the honey in the water, pour it into a matrass, and set it aside in a warm place: as soon as it has begun to ferment, add of good opium, 4 ounces, having previously dissolved (diffused rather) it in 12 ounces of water. Permit them to ferment together for a month in a place heated to 24° R. (20° Centigrade); then evaporate until ten ounces remain, the liquor having first been filtered; filter again, and add, of alcohol (32 Be) 4½ ounces: preserve it in a well-stopped vessel; the ratio of the dissolved portion of the opium to the entire tincture is 1 to 7¼.

If we consider that one of the principal objections to the use of wine, as a menstruum for extracting the virtues of plants, is its liability to undergo fermentation, we shall find little reason to approve of the above tincture. We must further reflect on the changes which vegetable substances undergo by fermentation, and on the exceedingly active nature of opium, which causes it to be exhibited in such small doses. If its activity be at all impaired, (which, by undergoing the above process, there is reason to expect,) the ordinary dose will be no longer sufficient, or its efficacy may perhaps be entirely destroyed. From both these considerations this appears to us an improper preparation.

We next come to the *Cerevisiæ Medicatæ*, which are directed to be medicated in two ways, either by adding the medicinal ingredients as soon as the fermentation commences, or by waiting until it has terminated. The same reasons which have led us to condemn the last remedy, induce us to give a preference to the latter mode of preparation. There are no more than two examples of this class of remedies given in the Codex, the first of which, cerevisia de kina-kina, promises to be a valuable article, particularly as from its simplicity it can readily be procured. It is made by digesting, for two days, one ounce of bark in two pints of beer. Perhaps it would be an improvement if the process were conducted on the large scale,

since much of the advantage to be expected from the menstruum must be lost by exposure to the air. To obviate this inconvenience nothing more would be requisite than to introduce the bark into the cask destined to contain the malt liquor; but probably, the most effectual plan of imitating this solution would be to add to the beer at the time of using it, as much of the tincture as might be equivalent to the quantity of bark employed for the preparation of the cerevisia medicata.

Under the head of *Olea Medicata* we expected to have found oleum camphoratum (*liniment. camphorat.* of the Codex), linimentum ammoniacale, and one or two other oily or saponaceous preparation, which, however, are ranked under a separate head in another part of the work. This article (olea medicata) contains some useful formulæ, such as the olea cicutæ, strammonii, solani, nicotianæ, nyosciami; these are all prepared in the same way, namely, by digesting with a gentle heat one part of the subject in two parts of olive oil. That property of fixed oils, whereby they are capable of extracting the narcotic and acrid virtues of some vegetables as well as animals, renders them exceedingly well adapted for such compounds. The oleum de narcoticis is apparently a useful remedy; the name is exceedingly apposite, for there is scarcely a narcotic in the materia medica which does not enter into its composition. It contains strammonium, solanum nigrum, atropa, nicotiana, hysociamus, and papaver. Had the ingredients been limited to these, it had been better; the twelve remaining appear to us an addition rather than an improvement. A very useful form for the external exhibition of cantharides, is the oleum de cantharidibus, procured by digesting for six hours, with a gentle heat, one part of powdered cantharides in eight of olive oil; the decoction is to be filtered, and is then fit for use. This is evidently a most useful stimulating liniment. It is a pity that this otherwise neat and important sub-section should be disgraced by including a formula for oleum de lumbri is vino mediante paratum.

The article Tinctures is prefaced by some judicious remarks, well worthy the attention of the practical pharmaceutist. The authors direct for their preparation a spirit of three different standards, viz. 36, 32, 22, of Baumé's areometer. With the first are prepared the resinous tinctures; with the second, those wherein the resinous and extractive, or gummy parts, hold nearly an equal place; and with the third, those wherein the latter predominate. It has been by some authorities contended that the extracting power of the spirit is increased by the addition of alkaline agents; but that the reverse is true has been

ascertained by direct experiment, for which the public are indebted to the compilers; for example, they have satisfied themselves that a smaller quantity of guaiacum is dissolved in spirit of ammonia than in pure alcohol of the same strength; that the quantity of matter dissolved from the root of valerian is the same in both cases; that the addition of subcarbonate of potass to alcohol much diminishes the solvent power of the latter when digested on amber; and that pure potass deprives alcohol of its power of forming a tincture with that substance.

The number of tinctures is very considerable; they are divided into simple and compound. The principal part of the simple are made according to two or three formulæ, a circumstance which greatly facilitates their preparation, and gives an accurate knowledge of their strength, particularly as to several of them is annexed a table of the quantity of matter taken up from the subject by the spirit. There appears to be a defect in the tincture of opium of the Codex. It is made from the watery extract instead of the substance itself as is directed by the Edinburgh and London Colleges. The latter appears decidedly the best method of preparing it. In the Irish Pharmacopœia, purified opium is directed to be used in making the tincture. The mode of purifying the opium, is by dissolving it by heat in diluted alcohol, and evaporating to the form of an extract. This extract is not more proper than the substance itself, if selected in a careful manner, and it possesses the disadvantage of being a very expensive substitute. According to the formula of the Codex, one part of the watery extract is contained in twenty-four of the tincture.

The compound tinctures, though not very numerous, are exceedingly complex. One of them contains no less than eighteen ingredients, another sixteen, and so on. Among them we recognize Huxham's celebrated tincture. The tinctura aromatica cum acido sulphurico, approaches to the ether sulphuricus cum alcohole aromaticus, although more complex. The tinctura gentianæ cum ammonia, of which the following is the formula, is a good preparation:—

R Radicis gentianæ contusæ unciam unam,...vel....32
Carbonatis ammoniæ drachmas duas,.... vel . . 8
Digerantur simul per dies quatuor in alcoolis (22 Be) libris duabus . . . . . vel . . 1,000
Coletur liquor et exprimatus deinde per chartam trajiciatur.

This tincture may be varied by substituting carbonate of potass or soda for the ammoniacal carbonate. With regard to the extent of this article, though it must be acknowledged that it contains a great number of useless tinctures (principally of the simple kind,) yet a superabundance of these medicines is

certanly more desirable than a deficiency. A number of etherial tinctures are to be found in the Codex: some of these are obviously improper; for instance, the tinctura ætherea digitalis purpureæ, in which the quantity of matter dissolved is so small (amounting to no more than 1-68th of the tincture) that its effects must always be counteracted by the opposite action of the menstruum (sulphuric ether;) unless, indeed, we adopt the opinion of some later writers, who assert that the sedative effects of digitalis are merely secondary, the consequence of a powerful stimulant action in the first instance. The tinctura ætherea alcoolica de muriate ferri, does not seem liable to such objections, it consists of one part of sublimed muriate of iron, digested for eight days in nine parts of ether, in a well-stopped flask; the liquid is then to be poured off, and preserved in small bottles, entirely filled. The tinctura castorei ætherea seems a very proper preparation, as well as those of musk and amber. A curious compound terminates this article, namely, æther phosphoratus, formed by dissolving phosphorus in sulphuric ether, which takes up about 1-152d of its own weight of phosphorus.

The next article of this section is *Syrupi*, which are divided into *simplices* and *compositi*, and each of these into purgantes and non-purgantes. The number of simple syrups is enormous; and this is the only thing to be observed of them; there are upwards of seventy, making, with the oxymels. &c. about one hundred. The syrupus de mercurio medianti gummi seems rather an improper one; it is made by triturating together four parts of mercury, twelve of gum arabic, and sixteen of syrup of poppies (or diacodion). Sulphuret of potass appears also an unfit ingredient for a syrup. The syrup of scammony is very remarkable, chiefly from the mode in which it is prepared, which is as follows:—Half-an-ounce of scammony, four ounces of refined sugar, and eight of alcohol, are heated in a silver dish to a moderate degree; the mixture is then set on fire, and permitted to burn out spontaneously, being frequently stirred during the combustion. The syrup thus prepared is mixed with four ounces of syrup of violets. Eighteen grains of scammony are said to be contained in an ounce of the syrup, but it is difficult to say what change that substance may have undergone during the process.

When we consider the very apposite remarks which accompany the article on distilled waters, we are somewhat disappointed in the directions for the preparation of the syrupi ex aquis stillatitiis. The formula according to which all these

are made, is that of syrupus de mentha piperita, and is as follows:—

R Summitatum menthæ piperitæ exsiccatarum et mundatarum unciam unam ..... vel ..... 32

Aquæ ejusdem menthæ stillatitiæ libras duas vel 1,000

Digere balneo maris per horam unam et alteram in vase clauso. Dein cola et per chartam trajice, tunc liquori adde.

Sacchari albi duplum et solvatur balneo maris vase clauso. Refrigeratus syrupus per pannum trajiciatur.

One or two objections to this formula occur to us; first, the distilled waters of plants, not sparingly odorous, are found to gainno thing of fragrance by a repetition of the process of distillation; therefore, where is the necessity of digesting a fresh quantity of the plant in its distilled water? Secondly, even supposing the water to imbibe a fresh quantity of the aroma of the plant, is it not probable that a proportionate loss will be sustained during its digestion; for let us suppose the vessel ever so well closed, still a portion of the volatile part must be disengaged? There is evidently, then, in this process a needless expenditure of time; but it is also uneconomical, since all the plants which are possessed of any of the bitter principle, will, during the digestion, communicate it to the water, which is a perfect solvent for it. Hence a greater proportion of sugar is required than if they were prepared by simply dissolving, in the distilled water, a sufficient quantity of sugar to convert it into a syrup.

The syrupi compositi are of such an amazing complexity, that it would occupy too much time as well as paper to comment on them. The most simple is the syrupus e pulmonibus vitulinis, consisting of *only* seven ingredients, independent of the water and sugar. It is evident, from the frequent occurrence through the Codex of the article which gives its name to this syrup, that it is considered by the Parisian faculty to be an agent of no small importance. In the article mellita there is described a method of purifying honey, which is laborious as well as tedious. It consists in boiling together honey, water, carbonate of lime, whites of eggs, and charcoal. We are informed that this mixture, when strained, affords honey of a very pure quality. There are few of the mellita which have not a corresponding preparation in the British Pharmacopœiæ.

The fifth section is one of too trifling a nature to be worthy of a place in the Codex, more particularly as the compounds it contains can never be kept in readiness for use, but must always be extemporaneously prepared. They are called oleo-

sacchara, being, as the name imports, composed of sugar and some oil, which is always of the volatile species.

The sixth section, under which we find the articles—1. Mucagines, 2. Gelatinæ, 3. Extracta, 4. Resinæ, comes next under our view. Of the two first of these little is to be said, except that the first corresponds with our "mucilagines." We have nothing exactly answering to the second, which applies to such solutions, as well vegetable and animal, which, during the process of cooling and inspissation, assume the form of a tremulous mass, to which the term jelly is commonly applied. The third article, *Extracts*, is divided into four heads:—1. Extracta e succis inspissatis, among which the most remarkable are, the extracts of hyosciamus, atropa, cicuta, and aconitum. The London College differs from both the Edinburgh and Dublin, in the directions given for the preparation of the three first of these, the fæcuæ being, by the first, retained in the extract, while in the latter it is not. The question has not yet been completely decided; though, in our opinion, the process of the London College is the most proper. However, it is possible, that, in particular instances, each may have its advantage: be that as it may, the authors of the Codex have adopted a wiser course, for they have, in general, given directions for two extracts from each of these substances, one containing the fæculæ, the other not. In the preparation of the extractum elaterii of the Codex, the deposition of the feculent part is not permitted, but the entire juice is evaporated, so that the extract is like all the former, properly speaking, an inspissated juice. The second species of extracts consists of the extracta ex maceratis infusis et decoctis. Among these we find hard and soft extracts from bark, opium, senna, and rhubarb. Next in order occurs the formula for the preparation of *emetine*, being the one used by Mons. Pelletier, the discoverer of the substance. It is this:—

Take of the Root of ipecacuan, one ounce,
Sulphuric ether, two ounces.

Let the powder be macerated with a gentle heat, for some hours, in a distilling apparatus; let the portion which remains be triturated and boiled in four ounces of alcohol (40 Be), having previously been macerated in it; let the liquor filter, and let the remainder be treated with fresh portions of alcohol, as long as it takes up any thing from the root. Mix all the solutions, and evaporate to dryness. Let this alcoholic extract be macerated in cold water (distilled), in order that every thing soluble in that menstruum may be dissolved; filter and evaporate to dryness. This extract is emetine, and is equiva-

lent to about one-sixth or one-seventh of the root. In this state it contains a small quantity of gallic acid, which is too inconsiderable to affect its medical qualities. Under the third head are ranged the extracta e succis concretis mediante aqua aut vino. It commences with four different formulæ for the preparation of extract of opium. In the first of these, white wine is used as a solvent; in the second, the operation is performed by maceration in cold water, and a careful separation of the sediment and superficial pellicle which are formed on standing. The object—(is it a desirable one?)—to be obtained by this method is, we are informed, that we may be enabled to procure an extract "*omni odore viroso carens.*" In the third, which is the formula of Deyeux, the opium is directed to be macerated in water to which yeast has been added in order to promote fermentation; as soon as the liquor has become clear and limpid, it is to be diluted with water and filtered, then boiled until all the virous odour has been expelled, after which it is to be evaporated to an extract. After what we have said on the vinum opii fermentatione paratum, it is not necessary to comment on this substance. The fourth formula is that of Diest, the acmé of absurdity. In this it is directed that one part of opium should be digested in four of water at a boiling temperature, for half an hour; the residuum to be treated in like manner, and this decoction to be repeated two or three times; the filtered decoctions are then mixed, and boiled incessantly for *six months*, supplying the waste of water! It is also necessary occasionally to clean the bottom of the vessel, in order to separate the crust which is there deposited. This prescription is a disgrace to the Codex, and we cannot help observing that the authors are the more deserving of censure for introducing it, inasmuch as we may learn, from the words of a note subjoined to it, that they themselves entertain but a poor idea of its importance. They actually defend themselves for admitting it into the list of medicines, by bestowing on it the praise of insignificance: "hanc formulam servavimus ut diu celebrem et cui viri in arte non mediocris auctoritatis peculiarem tribuere amant efficaciam innocentiæque pretium." The extractum myrrhæ aqua paratum seems rather an injudicious preparation. Under this article are contained extracta a felle bovino et vitulina. The fourth head contains extracta mediante vino et alcoole adjuvante carbonate potassæ. Of this there is only one instance given, namely Backer's extract of hellebore. We should have expected that, acting on the result which had been afforded by the experiments on the preparation of tinctures with alkaline solvents,

the authors would have omitted this article, and contented themselves with the simple extract without the addition of the carbonate. Among the alcoholic extracts is that of the nux vomica, which is made with a spirit of 22 of Baumé: this is no doubt, a very active remedy. The alcohol is directed to be saved during the process of inspissation, but it is by no means to be appropriated to any use, except the future preparation of this substance, being impregnated with some part of it, and proving, therefore, of a poisonous quality.

The seventh section, *Medicamenta per analysim chymicam e corporibus elicita* contains the following heads: 1. *Acida.* 2. *Alkalia.* 3. *Subcarbonates alkalini, &c.* The acids contained in the Codex which are not received into the Pharmacopœiæ of these countries, are the *sulphurous, nitrous, phosphoric, phosphorous, tartaric, oxalic and hydrocyanic.* The two last have lately considerably attracted the attention of toxicologists. Those which enter into the British Materia Medica are prepared nearly as with us. Of the alkalia and subcarbonates alkalini there is only one article which is not used among us, while many of those which are contained in our lists are excluded from the Codex. Soda exsiccata and lime are entirely excluded but there is introduced a solution of caustic soda. The mode of preparing bicarbonate of potass is by passing a current of carbonic acid gas through a solution of the carbonate or sub-carbonate. The authors have rejected the neat, elegant, and speedy process of the London College. There are in the Codex three different processes for the preparation of subcarbonate of potass, the first is that in use amongst us, that is, destroying by fire the acid of the supertartrate, and thus converting part of it into carbonic acid, which unites to the base, forming a subcarbonate, since the full carbonate cannot exist at so elevated a temperature. The second process consists in deflagrating the same salt with nitrate of potass, and in this both the acids mutually decompose each other, and one of the products of the decomposition is carbonic acid, which as before unites with the base, and for the same reason forms a subsalt. The third and most expensive, is performed by deflagrating nitrate of potass and charcoal. The two last are highly and unnecessarily expensive, for though according to the last, it is impossible that any impurity could creep into the product, yet the carbonate procured by the first is sufficiently pure for all medical purposes; and although it may contain a very small portion of foreign salts, yet they are of such a nature as not probably to be got rid of by the second process.

In the chemical part of the work, besides the old and vul-

gar names of the different substances, others are attached, adapted to the new nomenclature. For instance, the title of subcarbonate of potass, is subcarbonas potassæ, or according to the new nomenclature, sub-deuto-carbonas potasii. The first part of the name indicates the comparative quantity of acid in the salt, the second that of oxygen contained in the base; the third makes known the acid, and the fourth the basis of the base. Sulphas potassæ is termed deuto-sulphas potassii; sulphas cupri cæruleus is called deuto-sulphas cupri, &c.: and in all the neutral salts, the first part of the quadruple name is omitted, the three latter being generally retained. This rule, however, is by no means so strictly observed as it ought, for in many instances, the second part of the quadruple name is entirely omitted, which might lead to the supposition that a different proportion of oxygen entered into the composition of the bases of salts in many cases in which they are identical. For instance, sulphate of soda is denominated deuto-sulphas sodii, while the phosphate of soda is called sub-phosphas sodii, an inaccuracy of nomenclature calculated to lead the reader into the double error—first of supposing that in this salt the acid is united with the metal itself and not its oxyde; and secondly, of imagining that it is not a neutral compound. Again, acetate of potass, acetate of soda, subacetate of lead and a variety of others are designated by names compounded of those of the acid, and the metallic basis of the base, no regard being had to the presence or quantity of oxygen. The above are called acetates potassii, sodii, et plumbi. The triple salts are in some cases inaccurately denominated; for this reason, that it often happens that the two substances which act as bases, are not by any means at the same degree of oxydation; as, for example, in the tartras potassii et stibii, where the new name deuto-tartras potassii et stibii might lead to the conclusion, that in this salt both the metals are at the second degree of oxydation—a conclusion obviously erroneous. The metals and oxydes which are contained in the Codex not found in the British Pharmacopiæ are, antimony (the regulus), oxyde of bismuth, or, according to the new nomenclature, subnitrate of bismuth, and diaphoretic antimony, consisting of peroxide of antimony (stibic acid), and potass in a state of chemical combination, and prepared by deflagratiug metallic antimony with nitrate of potass, and the protoxyde of mercury, which is directed to be prepared by precipitating the oxyde from the protonitrate by means of caustic potass. The same salt is directed to be decomposed by ammonia for the preparation of the mercurius Hahnemanni solubilis, or subprotonitrate

of mercury and ammonia; the precipitate obtained in this case is of a much deeper black than when potass is used as a reagent, which would not be the case were the oxyde alone thrown down. There is reason, therefore, (from this circumstance as well as the known disposition of ammonia to form triple salts,) to acknowledge the propriety of the name, which, according to the new nomenclature, the authors have conferred on this substance. The mode of obtaining metallic mercury free from impurities is highly expensive, as directed in the Codex; it consists in reducing the red oxyde. If the directions for procuring the carbonate of iron from the sulphate by precipitation be complied with, the salt obtained will be, as we conceive, a sub-proto-carbonate, and not as it is called, a sub-deuto-carbonate. It is true there will be a slight admixture of the latter, if the process be performed in the usual way; but if proper precautions are taken, the entire product will be a sub-proto-carbonate. Phosphorus and precipitated sulphur constitute separate articles at the conclusion of this section.

Of the eighth section, *Medicamenta per Synthesim seu ex unitis arte Chemica elementis composita.* The first article is ethers. In addition to those in medicinal use in these countries, viz. the sulphuric and nitric, the Codex contains the muriatic and acetic.

The salts are arranged according to the acids they contain. The first class consists of the muriates, chlorurets or hydrochlorates, the muriates of gold and potass, and the hyperoxymuriate of potass are preparations received into the Codex, without having made their way into the materia medica of this country. In order to procure calomel from corrosive sublimate, the Codex directs 480 parts of the latter to be treated with 300 parts of metallic mercury—a quantity manifestly too small; since, in order to convert 480 parts of sublimate into calomel, 356 parts of metallic mercury are requisite. There is, therefore, a waste of very nearly one-sixth of the sublimate employed, because 356:480::300:404.4943 (=404½ nearly); the remainder, therefore, that is 75½ parts of the sublimate, is lost. The proportions directed in the British Pharmacopœiæ are very exact; the quantity of sublimate being to that of the mercury as four to three, or as 480 to 360—as near an approximation as can conveniently be made in round numbers. It is, however, to be observed, that even the small excess of mercury, which in this case contaminates the product, is more difficult to be separated than a slight excess of sublimate. A formula of Jewel for obtaining calomel in a state of minute

division is here inserted; it consists in exposing the submuriate in the act of sublimation to the vapour of boiling water. In the preparation of corrosive sublimate, deuto-chloruret of quicksilver by sublimation from muriate of soda, and acidulous sulphate of mercury, an addition of black oxyde of manganese is recommended, in order it should seem, that there may be no deficiency of oxygen, the presence of that agent being absolutely indispensable to the success of the process. The method of obtaining muriate of antimony is neater, though at the same time more expensive, than that of the Edinburgh Pharamcopœia. It consists in distilling a mixture of corrosive sublimate and antimony, in the proportion of eight of the former to three of the latter. A slight inaccuracy, which we are inclined to consider typographical, has crept into the formula for turbith mineral. We are directed to stop the process as soon as the *sulphuric* acid has nearly ceased to come over. If we were to adhere to this rule, the quantity of subdeuto-sulphate obtained would be small indeed.

The next class of salts is formed by the nitrates, among which we observe the old sal prunellæ, or nitras potassæ fusus sulphatis pauxillo admixtus; it is prepared by projecting one part of sulphur upon 128 parts of nitrate of potass in infusion. It is evident that the substance thus procured, can differ but little from pure nitrate, as far as regards medical purposes; for one part of sulphur decomposes about $6\frac{3}{4}$ of nitre, giving rise to about $5\frac{1}{2}$ of sulphate. The entire quantity may therefore be considered unaltered, and the proportion of the sulphate to the entire mass will be that of $5\frac{1}{2}$: 128 (more accurately $5\frac{5}{8}$: 126 and 5-6ths), or as 1:23.2727, &c.; so that when we consider the dose in which the nitrate is commonly exhibited, we still perceive how totally useless the addition of the sulphate is, since, probably, the quantity administered would never exceed one grain at a time. We doubt the propriety of the term *deuto-nitras liquidus*, as applied to aqua mercurialis, which, from the directions given for its preparation, seems rather the proto-nitrate; it is probably a mixture of both salts, the latter predominating. It is procured, by digesting in a moderate heat, 120 parts of mercury in 150 parts of nitric acid (33g). When the solution is compleated, 900 parts of distilled water are added. These instructions differ from those for the preparation of the substance immediately preceding, (which is a real protonitrate), only in this, that the acid is in the latter case more abundant and of greater strength. With regard to the degree of heat they are precisely similar. We entirely approve of the plan of keeping nitrate of silver in

two forms, as directed in the Codex, one in which the salt is regularly crystallized, and the other that commonly used. If the acetate of soda, which the authors have introduced, be found to answer the intention of acetate of potass, it will be a most convenient substitute, since the latter by its extreme deliquescence is very difficult of management.

The most remarkable of the tartrates is, the *tartras acidulus potassæ solubilis admixto acido boracico.* By admixture with this acid, the supertartrate, a very insoluable salt, acquires a most singular degree of solubility. The process is this: 30 parts of boracic acid and 20 parts of distilled water are heated together in a silver dish; as soon as they have attained a moderate degree of temperature, 120 parts of the supertartrate are added in divided portions. The whole liquefies, and by a continuation of the heat is evaporated to dryness, when it assumes the form of a powder, which is to be closely preserved from the contact of the air. At a time when the supertartrate of potass has been ascertained to be possessed of such valuable qualities as a medicine, every thing which tends to facilitate its exhibition, must be eagerly received by the medical world.

The process here given for emetic tartar is rather tedious, requiring, at least, two evaporations; it is prepared from the glass of antimony. Of all the methods directed in the different Pharmacopœiæ, that of the Dublin seems to merit the preference, as well from its neatness and simplicity as from its certainty of success. A tartrate of mercury is directed in the Codex, procured by adding to a solution of protonitrate of mercury supertartrate of potass dissolved in distilled water, as long as a precipitate continues to fall down. A curious tartrate of iron is prescribed in the Codex; it is made by mixing together liquid tartrate of iron and neutral tartrate of potass, and evaporating them to dryness. There occurs in this part of the work a salt of iron, which has not been admitted into the Pharmacopœiæ of this country, we mean the protomelate, prepared by digesting iron filings in the juice of apples not perfectly ripe. This is, perhaps, intended to supply the place of the acetate, which is not among the preparations of the Codex—a circumstance the more extraordinary, as that salt is certainly one of the nicest chalybeates which we possess.

The article on mineral waters is very useful, and we cannot help regretting that such a chapter does not form a part of our Pharmacopœiæ; for, although the use of artificial waters may not prove so serviceable as that of the natural, yet this is to be ascribed to the local circumstances of the latter, not to

any real difference between them. If the waters themselves are capable of producing any effect on the constitution, we hold it absurd to say that their perfect imitation should be less efficacious; if the analysis be correct in the first instance, and the synthesis perfect in the second, there is no doubt but the artificial will prove of the same intrinsic value as the natural. The principal of those for which formulæ are inserted, are the waters of Vichy, Seltzer, Sedlitz, Balaruc, Spa, Pyrmont, Barèges, Aix-la-Chapelle, &c. The following form for the application of sulphuretted hydrogen to the surface of the body, may be worthy the attention of our readers.—*Aqua ad balneum hydrosulphurata.*

℞ Hydrosulphureti sodæ liquidi gradus in areometro notantis, uncias decem . . . . . vel . . . . . 320
Solutionis Salino-gelatinosæ, uncias quatuor.vel . . 128
Misceantur et deinde in balneo paulo ante ingressum agitando et penitus commovendo dissolvantur.

The solutio salino-gelatinosa consists of distilled water, one pound or 500, carbonate of soda, and animal jelly, each one ounce or 32, sulphate and muriate of soda each half an ounce; naptha 20 grains or 1.0. The bath prepared in the above manner, is, of course, not to be administered in metallic vessels.

The ninth section, namely, "*Medicamenta ex mistis tantum simplicibus conflata*," contains all those mixed masses in which no chemical action is contemplated; such an occurrence, however, is not sufficient to remove any compound from this section. In electuaries, for example, where the ingredients are presented to each other in the state of solution, or approaching to it, it not unfrequently happens that this effect is produced unnoticed, the name given to the resulting mixture not being calculated to excite in our minds the idea of that action.

The first article is "*Species*," or mixtures of the parts of different vegetable substances in the dry state, either pulverised or not. Since these are preparations unknown here, we shall give an example of the first which occurs, "*Species dictu emollientes.*" ℞ Foliorum malvæ rotundifoliæ, althaæ officinalis, verbasci thapsi, lenecionis vulgaris, parietariæ vulgaris, singulorum partes æquales—misce et serva in usum. Such a mixture may be very convenient to have in readiness if we wish to prepare an infusion or decoction of emollient herbs, but it appears of too trifling a nature to be admitted as a distinct preparation, since the ingredients can be mingled together extemporaneously at the time that such infusion or

decoction is prescribed. The article pulveres compositi contains some excellent formulæ: the pulvis de senna, scammonio et lignis approaches nearly to the pulvis senna compos. of the London Pharmacopœia, except that it contains a small portion of guaiacum wood and saraparilla root. The pulvis de scammonio and jalapæ compos. resembles the pulvis jalap. comp. of the Edinburgh Pharmacopœia, in the proportions in which the jalap and supertartrate are combined in it; but they differ in this, that the quantity of the purgative ingredients is doubled in the former by the addition of the same quantity of scammony as there is of jalap, so that the purgative powers of that medicine are more than twice as great as those of the latter. The formula for Dover's Powder is extracted from Swediaur's Pharmacopœia; it is as follows:—Take of sulphate of potass, nitrate of potass, each four parts; melt them together in a crucible, pour the liquified matter into an iron mortar, and when nearly cold add of dry extract of opium, pulverised, one part, triturate them, and then add of ipecacuan and liquorice root (powdered), each one part. The extract of opium, as well as the ipecacuan, forms 1-11th of the entire powder; the proportion of these two ingredients therefore is somewhat smaller than in P. ipecac. comp. of these countries, but its diaphoretic effects are much greater than those of the latter, on account of the addition of the nitrate of potass.

The authors have neglected a good many of the electuaries which were found in the preceding edition, and have limited them to a small number (not exceeding eight or nine); as if, however, anxious to throw as many substances as possible into this form, they have made up in complexity for the deficiency in number. The electuaries are of two sorts, the purgantia and the non-purgantia sive alterantia; of the latter species there are only two examples, first the electuarium de croco, consisting of about twelve ingredients: those on which its virtues principally depend are cinnamon, saffron and carbonate of lime; it appears designed for the same purposes as the aromatic confection of the London Pharmacopœia; it is however by no means so warm; the formula in the latter work is much more simple. The second of this kind of electuaries is the elec. de kina-kina, wherein the bark forms about 1-8th of the mixture, one fiftieth of muriate of ammonia is added; the remaining components are honey and syrup of absinthium. This is a good form for the exhibition of the bark, but there are some cases where the tendency of cinchona to produce diarrhoea, will probably be increased by the addition of the other substances. The elect. de

rheo compos. contains (among eighteen or nineteen substances) rhubarb and senna, the sum of both mounting to not quite 1-14th of the entire—a proportion evidently too small. The elect. de aloes comp. is made up (strange to say) of only eight ingredients, not one of which is inactive; they are ammoniacum, senna, calomelas, arum, aloe, scammonium, rheum, ferrum. The next preparation we shall notice in this article is the electuarium opiatum polypharmacum, theriaca dictum, and never was an epithet so justly applied as the term polypharmacum to a farrago containing upwards of seventy articles. This "ne plus ultra" of complexity is ushered in by the most solemn assurances that the compilers have not dared to encroach on, or alter in the slightest degree, the directions given in the preceding Codex (60 years since), for the preparation of this "percelebris compositio;" and that, although several of the compound medicines, which formerly entered into its composition, have lately been excluded from the pages of the Codex, yet they have taken especial care to introduce every one of the constituents of those compounds in the exact proportion in which they entered the preceding formula; for instance, though the trochisi viperini are no longer in use, yet the caro viperina is carefully preserved as an ingredient of the theriaca. In order to give our readers some idea of the complexity of this formula, suffice it to observe, that the authors have judged it necessary to divide it into thirteen distinct heads, for the purpose of giving us some insight into the nature and action of this monster in pharmacy. These are, 1. Acria. 2. Amara. 3. Styptica. 4. Aromatica exotica. 5. Aromatica ex indigenis. 6. Aromatica ex umbelliferis. 7. Resinæ et Balsami. 8. Graveolentia. 9. Virosa. 10. Gummosa. 11. Terra inert. 12. Dulcia. 13. Vinum. The amazing complexity of this medicine, the very circumstance on which its celebrity is grounded, is a sufficient cause of condemnation. How is it possible to suppose that the simultaneous exhibition of agents so opposite is a desirable object? It will, no doubt, be always a most valuable acquisition to the quack, who, not knowing what intention he should endeavour to fulfil, may reckon with tolerable certainty, that some of the articles of this panacea are adapted to the wants of his patient. We cannot too strongly reprobate the retention of this compound, which has obviously arisen from timidity in the authors, who feared to reject a remedy of which so high an opinion is entertained. But by whom? They themselves answer the question, and confess they have acted according to the wishes of those who are totally unqualified to form an opinion. One of the reasons given for its introduction into the new Codex is,

"quia vulgo sæpius requiritur." A parity of reasoning would lead them to introduce into their Pharmacopœia all the quack medicines, of the composition of which they could attain a knowledge; and, indeed, this intention they have displayed on one or two other occasions. It appears to us, that in assigning the above cause for the retention of certain remedies, they have mistaken their duty, which is no less to decide what medicines ought to be retained or rejected, than to give accurate instructions for the compounding and preparing of such as are judged proper to compose a part of their materia medica. After all the ingredients of the theriaca have been mixed together, secundum artem, they are set aside for one year, in order to undergo a slow fermentation, as it is directed in the Codex. That they do not undergo this process, seems probable from the circumstance that analysis discovers no difference between parcels of theriaca differing much in age, the recent preparation perfectly resembling that which has been of several years standing. Diascordium is another electuary, translated from the old edition to the new Codex, in all its pristine complexity, with the same scrupulous regard to its composition as that we have just been considering. It is only to be wondered how the theriaca cœlestis and the benedicta laxativa, each of them consisting of at least twenty articles, could have so far degenerated as to have forfeited a place in the new edition. The seventh head into which this section has been divided is *Pilulæ*,—a good article, less extensive than we had anticipated. Several of the prescriptions coincide entirely or nearly with some of those in the Pharmacopœiæ of this country. For instance, the pilula de aloe et myrrha, or Rufus's pill, agrees with that preparation as directed by the London and Edinburgh Colleges, and differs from the Dublin formula only in being composed of socotorine, instead of hepatic aloes; the pilula de aloe et gambogia contains nearly the same ingredients as the pilula gambogiæ composita of the London Pharmacopœia, but differs from it in this, that previous to the compounding of the mass, the substances are reduced to the form of a vinous extract, which is evaporated to a proper consistence for making pills. The pilula de aloe et sapone of the Codex agrees with the simple aloetic pill of the Edinburgh Pharmacopœia, while the pilula de aloe et fœtidis is, as it were, a compound of the pilula assafœditæ composita of the Edinburgh (or pilula myrrhæ composita of the Dublin), and the pilula ferri composita of the London Pharmacopœia. It is made according to a most excellent formula, from socotorine aloes, senna, assafœtida, galbanum,

myrrh, saffron, mace, sulphate of iron, and oil of amber. There is no formula for the reduction of mercury into the state of pills, except one, wherein it is combined with purgatives—an omission, in our opinion, censurable. Bacher's pills are here introduced: they consist of extract of black hellebore and extract of myrrh, of each eight parts, and leaves of the carduus benedictus, reduced to powder, three parts. We are sorry, for the credit of the article on pills, to observe the pulvis onisci aselli occurring more than once as an ingredient among its formula.

Of the tenth section we have little to observe, save that it appears very complete. It includes some excellent preparations not yet admitted into our Pharmacopœiæ, among which are to be reckoned the lotio et linimentum ad scabiem, which owe their efficacy to the sulphate of potass. The adeps tartrate stibii medicatus is also a good and useful preparation; so likewise are the adeps muriate hydrargyri corrosivo medicatus, the emplastrum de cicuta, and the emplastrum de mixtis quatuor, compounded of four different plasters, namely, emplastrum saponis, emplastrum cicutæ, emplastrum de gummi kesinis, and emplastrum de hydrargyro compositum.

The body of the work is terminated by an article entirely foreign to the British Pharmacopœiæ—*Suffumigationes*, which contains directions for the production of several fumigations, as well odoriferous as antiseptic, and also instructions as to the capacity of the chambers which a given quantity of materials is capable of perfectly fumigating.

In the Appendix we find formulæ for the preparation of extracta cum fæcula, from cicuta, aconitum, &c. and for the alcoholic extract of nux vomica, the form in which that drug is exhibited in the Hôpital de la Charité for the cure of paralysis. This extract differs from that directed in the body of the work, in being made with an alcohol of 32 Baumé, whereas the other is made with one of 22 Baumé. The activity of this extract is much greater than that of the extract prepared with the weak spirit. Two methods of procuring morphia are here annexed. The first is that of Robiquet, and is this:—300 parts of pure opium are macerated, during five days, in 1000 parts of water; it is then filtered, and there are added fifteen parts of perfectly pure magnesia, entirely free from acid; the mixture is boiled for ten minutes, and the sediment which forms is separated by the filter, after which it is washed with cold water, until the water passes off clear. It is then treated alternately with hot and cold alcohol, until it ceases to take up any more of the colouring matter, after which it is to be treated

with boiling alcohol (32 Baumé) for a few minutes. The solution, on cooling, will deposit crystals of morphina; a repetition of the treatment with boiling alcohol will procure a fresh portion of crystals, and the process is to be continued until they cease to be furnished. The second method is that of Sertuerner. The chief difference between them is, that in the latter ammonia is used instead of magnesia, and to the sediment, separated as before, there is added so much sulphuric acid, as is sufficient to convert the morphina into a sulphate, which is decomposed by a further addition of ammonia; the precipitate is dissolved in boiling alcohol, and crystalizes on cooling. This process may be seen at length in the "*Annales de Chimie, Julliet*, 1817." Three processes are given for hydrocyanic acid, the last of which, as the most simple and expeditious, we shall here relate. It was proposed by Mons. Vauquelin, one of the most celebrated chemists of the age, and one of the most distinguished amongst the authors of the Codex:—100 parts of the cyanuret of mercury is dissolved in 800 parts of distilled water: hydrosulphuric acid gas is caused to pass through the solution, so as to precipitate the entire of the mercury; in order to effect which with the greater certainty, the hydrosulphuric acid is to be added in slight excess; it is then filtered, and freed from the superabundant portion of this acid by mixing with the solution somewhat more of the carbonate of lead than is sufficient to saturate it; by frequent agitation, this substance absorbs the whole of the hydrosulphuric acid, and the hydrocyanic acid remains in solution, of the same specific gravity as that procured by Scheele's method. This acid is generally used in hospital practice, combined with some simple syrup, in the proportion of one part of acid to nine of the syrup. A method of preparing emetic tartar from the subsulphate is here annexed. We are informed that this affords a purer salt than the process directed in the body of the work. Cyanuret, or according to older nomenclature, prussiate of mercury, is also found prescribed in the Appendix. This salt has lately been adopted as an article of materia medica amongst some of the Continental practitioners, who recommend it in the strongest terms. It is, doubtless, a most dangerous remedy, and ought to be exhibited with the greatest caution; nevertheless, it seems worthy of a fair trial. This much we can positively assert, from our own observation, that even long before it was proposed by the Continental authors, we have witnessed the most happy effects from its administration in the treatment of syphilis, where other mercurials had been found to disagree with the constitution.

Having thus conducted our readers through this work, and given them as full a view as in our power of its nature and contents, we shall take our leave with one or two general remarks. When we compare this with the preceding edition, we must at once acknowledge that the authors have done much towards the simplification of pharmacy in France. Had they exerted themselves a little more in the pursuit of that end, their work had been, in our opinion, more perfect. This, however, is a question which appears in different lights to different authorities, and we must not, therefore, presume to decide upon it. The notation throughout that part which contains the prescriptive formulæ seems to us exceedingly improper, the decimal mark being used indiscriminately, as well for the separation of the decimal figures, as for the removal of the figures which stand in the place of thousands. Thus four thousand eight hundred, and four, with the decimal eight hundred, are written precisely in the same manner. (4, 800). In the formula for the preparation of syrupus de opio, the proportions are—

| | |
|---|---|
| Opii - - - - - - | 15 |
| Aquæ - - - - - - | 64 |
| Syrupi de saccharo - - - - | 4,800 |

Thus it might appear, that instead of four thousand eight hundred parts of syrup, only four and 4-5ths were directed. In matters of such serious moment, such a ground for error ought to be sedulously avoided. On the style and latinity of this work it is not very necessary to comment. Let it suffice to say " cum flueret Intulentus erat quod tollere velles." It runs through the several degrees of carelessness, elegance, and over-elaborateness (if we be allowed the use of the expression): We perceive by a note on the last page, that it is in contemplation to bring out, in a short time, a new edition. We trust the authors will then give a finishing hand to the improvements they have already made, and which have contributed, not only to their own reputation, but to the general advantage of the profession.

The Codex will be found a most valuable acquisition to the library of every medical man. It is, in truth, better adapted to that place than to the shop of the apothecary.

*Versuche ueber die Wege, auf welchen Substanzen aus dem Magen und Darmkanal ins Blut gelangen; ueber die Verrichtung der Milz und die geheimen Harn-Wege.* Von T. Tiedemann und L. Gmelin, Professoren in Heidelberg. Pp. 119, 8vo. Heidelberg, 1820.

(From the Edinburgh Medical and Surgical Journal, for July, 1821.)

This is a work of no common merit. It contains an account of an able investigation of some of the most interesting questions in physiology; and the results are so clearly stated, that, in the following article, we have had nothing more to do than to select, translate, and connect the various results as given by the authors themselves.

The question, which some physiologists have again agitated, whether there are any other means of communication than that of the *thoracic duct*, by which nourishment and medicines can pass from the intestinal canal into the mass of the blood, is of equal importance, both to physiology and the art of healing. To answer it new experiments were required; for the grounds on which physiologists have stated that absorption takes place by the roots of the vena portæ, render it only probable, and cannot be regarded as proving it. To ascertain the fact, Professors Tiedemann and Gmelin resolved on instituting a set of experiments with carnivorous and graminivorous animals, namely, dogs and horses.

In these experiments the animals had different substances given to them, the presence of which might be easily known by their colour, their smell, or by some chemical qualities. The chyle of the thoracic duct and of the lacteal vessels, the blood of the mesenteric veins, of the splenic vein, and of the vena portæ, as well as of other blood-vessels, were taken out and chemically examined. The chyle was then compared with the blood taken from these different sources, and the different kinds of blood were compared with one another, in order to answer the following questions:

1. What substances are taken up from the intestinal canal, and poured by the lacteals into the thoracic duct?

2. Do certain substances appear simultaneously in the thoracic duct and in the blood of the mesenteric veins, of the splenic vein, and of the vena portæ?

3. Do certain substances appear only in the blood of the vessels connected with the vena portæ, and not at all in the chyle of the thoracic duct?

In the course of these experiments our authors were led to inquire into the functions of the spleen, and into the supposed secret passages of the urine, which, at the beginning of their experiments, they had no intention of doing.

The series of experiments was made in the presence of the most distinguished pupils of the School of Heidelberg. In the valuable volume before us they are first described singly in detail, and afterwards the various conclusions derived from them are analytically stated.

The experiments are apparently only sixteen in number, but in reality much more numerous, as various substances remarkable for their smell, taste, colour, or chemical action, were given to the same animal, and at various periods before it was killed to ascertain the results.

The first set of conclusions indicates the places of the alimentary canal, in which the various substances given by the mouth were found after death. The object was, to ascertain the quantity of them successively absorbed in the stomach, duodenum, and other portions of the gut; and in this respect the results relating to odorous, colouring, and saline substances, are separately stated.

The odorous substances employed were camphor, musk, alcohol, oil of tupentine, garlic, and asafœtida; and it appears from the experiments that these substances gradually disappeared in the small intestines, while, on the contrary, colouring substances, even where they were given at the same time, were found farther down in the intestinal canal. The opinion of those physiologists who assume that alcohol is totally absorbed in the stomach, is wrong; for, in these experiments, it was still observed in the small intestines.

The colouring substances given were indigo, sap-green, gamboge, madder, rhubarb, alkanet, and tincture of litmus, and these observations show that several colouring substances, namely, indigo, madder, rhubarb, and gamboge, are not destroyed, either in the stomach or in the intestinal canal, and that the greater part of them passes off with the excrement. Portions of these substances which are absorbed from the intestinal canal, were again detected by their peculiar colour in the urine, but not in the chyle of the lacteals, or of the thoracic duct; they appeared, on the contrary, in the serum of the blood of the vena portæ.

It is worthy of remark, that the tincture of litmus and of alkanet became red in the stomach and intestinal canal, which therefore proves the predominating acid property of the gastric juice, denied by several eminent physiologists. In numer-

ous experiments on the properties of the gastric juice of dogs, cats, rabbits, and horses, our authors have repeatedly found that it acts like an acid. The chyme, when transferred into the duodenum, also displayed acidity, and coloured tincture of litmus red. On passing further on through the small intestines, its acidity gradually disappeared. It is, however, remarkable, that the liquid which is plentifully separated in the *intestinum cæcum* coloured the tincture of litmus red. This intestine appears therefore to supply the place of a stomach, in which the portion of the food not dissolved in the stomach and intestinal canal is again mixed with an acid solvent, to effect its perfect liquidity and solution. The fluid separated in the gizzards of fowls has the same effects. According to the experiments of our authors, it colours tincture of litmus red. The gastric juice of frogs does the same. It results from chemical experiments on the nature of the gastric juice, in which our authors are still engaged, that in this substance there are two different acids, one volatile and the other fixed. The former is probably the acetic acid, the latter the acid of milk.

The salts employed were prussiate of potass, sulphuro prussiate of potass, muriate of barytes, muriate and sulphate of iron, acetate of lead, acetate and prussiate of quicksilver. A great portion of these earthy and metallic salts appears to pass off with the feces, different salts of this kind, when absorbed, show themselves in the urine; a very few are met with in the chyle of the thoracic duct; several, however, are found in the blood of the mesenteric veins, and of the vena portæ.

The next set of conclusions relates to the passage of various substances into the chyle, as ascertained by the examination of the chyle taken from the lacteals and thoracic duct.

The colouring substances given to the animals never passed, as such, into the chyle of the thoracic duct, for our authors could not in any one experiment detect their presence, either by their colour or by the aid of chemical tests. Neither did they ever show themselves in the lacteals, or in the chyle taken from them.

These results contradict several of the results of the experiments of the older physiologists. Martin Lister* and Musgrave† said, that in their experiments on dogs, they found, after giving indigo, the chyle of the thoracic duct, or of the lac-

* Philosophical Transactions for the year 1701, p. 819.

† Ibid. p. 996.

teals, coloured blue. Baller, Gould, and Foelix, pretend to have seen the same thing. Even in J. Hunter's experiments, colouring substances are said to have passed from the intestinal canal into the absorbents. Haller* and Blumenbach,† who repeated Lister's and Musgrave's experiments with indigo affirm they obtained the same results. Viridet‡ and Mattei are even of opinion that the chyle of the thoracic duct was coloured yellow after they had fed animals on the yolk of eggs, and red after feeding them on beet root. But Hallé,§ who made many experiments on dogs, in order to ascertain if the chyle of the thoracic duct was coloured by matters mixed with the food, never perceived any change of colour effected in this way. Neither could Magendie‖ observe any such change in the chyle of dogs, to which he had given indigo, rhubarb, madder, and saffron.

Our authors, therefore, express doubts as to the experiments made by the older physiologists, and think it probable either that they were not sufficiently cautious and correct in performing their experiments, or that they suffered themselves to be deceived.

Smelling substances, like the colouring matters, were not observed in the chyle, either of the thoracic duct, or of the absorbents of the intestinal canal. Dumas, Magendie, and Flandrin, who also gave animals odoriferous substances, such as camphor, alcohol, and asafœtida, were never able to observe the smell of any of these substances in the chyle of the thoracic duct.

In regard to saline substances the result was not uniform. Lead, mercury, baryta, were not found in the chyle in any of the experiments in which they were employed. In the chyle of a horse which had got sulphate of iron, some iron was detected, but none in that of two dogs which got the muriate and sulphate. Prussiate of potass occurred in the chyle of one dog but not in that of another; and sulphuro-prussiate of potass appeared in the chyle of a dog to which it was given.

Perhaps it may be objected to these experiments, that the colouring, smelling, and saline substances given to the animals, were actually taken up by the lacteals, and already poured into the blood-vessels through the thoracic duct, and, consequently, at the time when the chyle was examined, they were no longer

* Elem. Physiol. T. VII. p. 62.
† Instit. Physiol. p. 357.
‡ Tractat. Med, Phys. de Prima Coctione, p. 260.
§ Fourcroy, Systeme des Connaiss, Chim. T. X. p. 66.
‖ Physiol. T. 2, p. 187.

to be found in it. This objection can have no weight; for in every case there was found in the stomachs and intestinal canals of the animals, when killed, abundance of these substances, which was consequently still exposed to the action of the lacteals.

On the whole, it follows that the lacteals chiefly take up the digested and dissolved portions of alimentary matters, and convey them as chyle through the thoracic duct to the blood-vessels. Smelling and colouring substances are not absorbed by them. Saline and metallic substances appear to be taken up by the lacteals only as an exception to the general rule; nor does the occurrence of saline substances in the chyle of the thoracic duct prove that they were taken up by the lacteals, for they might have been absorbed from the secreted urine, in which they soon show themselves.

But as it is a fact, that several colouring matters, such as indigo, rhubarb, madder, and gamboge, appear in secreted fluids,—for example, in the urine; and that smelling substances, such as camphor, musk, garlic, and others, which are taken into the stomach and intestinal canal, impart their smell to the exhalation from the skin and the lungs, we are immediately forced to conclude, that there must be some other way than the thoracic duct, by which substances pass from the intestinal canal into the mass of the blood, and from this into the secretory organs.

The next set of conclusions relate to the vital phenomena of the thoracic duct and lymphatics.

The thoracic duct possesses a living contractile power; for when it is tied and punctured, the chyle springs out like the blood from an opened vein. This appearance is not a consequence of the mere elasticity of the sides of the duct, as Mascagni, Bichât, and others supposed, but is the effect of a living contractile power. This is evident, because, in a certain time after death, the chyle does not spout out of the thoracic duct when tied and pierced, but merely exudes from it. It therefore follows, that the reaction of the sides of the thoracic duct, on the fluid it contains, depends on life, and disappears soon after death. The same phenomena were observed in the absorbent vessels of the intestinal canal, in those of the thigh, loins, and other parts. Immediately after the death of the animal, the chyle and lymph spouted out of these vessels when they were punctured. Some time after death, however, the liquor they contained merely exuded from them.

Several physiologists explain this appearance, by supposing that the sides of the absorbents possess irritability. This opi-

nion is in some measure supported by the visible contraction of the thoracic duct and other absorbents, when exposed to the effect of the air. In opposition to this, however, it is remarked by our authors, that in these and other experiments formerly made, they never could perceive any contraction of the absorbents, when exposed to mechanical or chemical exciting causes, as happens with muscular substances. Sulphuric acid alone, when applied to absorbents laid bare, causes a contraction, as it does in arteries and veins; but it is doubtful, however, if this phenomenon be not the consequence of a chemical action on the coats of the vessels; for absorbents, arteries, and veins, which our authors had preserved in spirit of wine for a year, visibly contracted in the same manner, on the application of sulphuric acid.

Our authors, therefore, think themselves justified in ascribing to the absorbents, arteries, and veins, and also to the excretory ducts of several glands, a living contractile power, different from irritability, by which the fluids they contain, such as the chyle, the lymph, the blood, and the fluids secreted from it, are propelled. These fluids keep the vessels in a forced state of extension, and the living contractile power of the coats of the vessel re-acts on the fluid, and propels it forward. Dr. Tiedemann informs us in a note, that he will explain himself more fully on this subject in a separate treatise, intended to contain the experiments which he has made on the manifestations of life in the arteries and veins of animals.

The fourth set of results relate to the observations made on the blood. The blood of the mesenteric veins was in some cases found to smell of the odorous substances taken into the stomach; thus of camphor in one horse, and somewhat of musk in another. The serum of the blood taken from the mesenteric vein of a horse, which had got a good deal of indigo, was of a dark yellowish green, and in that of a dog rhubarb seemed to be present. Salts given were often discovered in the blood of the mesenteric veins, as prussiate of potass, sulphuro-prussiate of potass, traces of lead and iron.

The blood of the splenic veins was the next subject of investigation. Our authors here remark at the outset, that they have not found the statement of Senac, Reloff, Hartmann, Haller, and others, that this blood does not coagulate, in any way confirmed. In all the experiments of our authors in which blood was taken from the trunk of the splenic vein, they saw it, when exposed to the action of atmospheric air, coagulate and separate into serum, and into crassamentum, containing red particles, and sinking to the bottom, like other

venous blood. They therefore entirely disregard the consequence which has been deduced from the above supposed property of the splenic blood, viz. that it was of essential service in secreting the bile, and they ascribe to the splenic blood no other part in this secretion than what may arise from its being poured into the trunk of the vena portæ and augmenting the mass of the blood from which the secretion of the bile chiefly takes place.

As several of the substances given to the animals appeared in the blood of the trunk of the splenic vein, which where not detected in the chyle of the thoracic duct, some physiologists may be disposed to regard this circumstance as a proof of Sir Everard Home's* former opinion, that substances are taken up in the cardiac portion of the stomach, conveyed into the spleen, and there mixed with the blood. But, without taking into account that Sir Everard retracted this opinion in consequence of his later experiments,† they observe, in opposition to it, that, in several of their experiments, precisely the same substances were found in blood taken from the coronary veins of the stomach, and from the trunk of the splenic vein. It is, therefore, probable, that the veins of the stomach generally, and consequently, also, the veins corresponding to the *vasa brevia*, which communicate with the trunk of the splenic vein, take up substances in the stomach, and in this way the presence of these same substances in the blood of the splenic vein is to be explained.

In the blood of the *vena portæ* our authors detected odorous substances, as camphor, animal empyreumatic oil, and musk; indigo, rhubarb, prussiate of potass, sulphuro-prussiate of potass, iron, lead, and baryta, either decidedly, or, at least, traces of them, and they are observed commonly in the blood of the vena portæ, both of dogs and horses, white chyle-like streaks.

From the fact of various substances being found in blood, taken from the different mentioned veins, and not making, in general, according to these experiments, their appearance in the chyle of the thoracic duct, it follows, that this duct is not the only and exclusive channel by which substances pass from the stomach into the blood. Since colouring, smelling, and saline substances pass from the stomach and intestinal canal into the vena portæ, it is necessary to inquire by what way or passage this is effected, and the following are the only supposition

* Philos. Transact. for the year 1807, p. 45.

† Ibid, for 1811. P. I. p. 163.

which can be made: Either all the lacteals do not enter the thoracic duct, and part of them join the veins which, by their union, form the vena portæ, and through these, substances absorbed from the stomach pass into the blood of the vena portæ; or substances pass directly from the stomach and intestinal canal into the veins; or, finally, both of these suppositions are true.

As to the communication between the lacteals and the vena portæ, it was not only supposed by several of the older anatomists to take place, but was rendered very probable by several observations. Job. Walæus* found, on tying the trunks of lacteals, that the chyle passed into the vena portæ; Rosen and Wallerius,† J. F. Meckel,‡ J. F. Lobstein,§ and G. C. Lindner,‖ perceived, on filling the absorbents of the stomach, of the intestinal canal, and of the spleen, with quicksilver, that it passed into the vena portæ; Astley Cooper,¶ also, found quicksilver in the vena portæ after injecting with it the absorbents of the mesentery.

Such a communication between the absorbents of the stomach and the intestinal canal, and the vena portæ, is, however, absolutely denied by Haller, Mascagni, Cruikshank, Lieutaud, Portal, Sœmmering, Hewson, and others. But, as happens not unfrequently in anatomy, physiology, and medicine, the authority of these celebrated men appears to have suppressed a truth. Though this assertion may appear bold to many persons, our authors feel themselves authorized to make it by later observations on this subject. Mr. Fohmann, dissector at the anatomical theatre of Heidelberg, who has long been employed in examining the secretory glands of the intestinal canal, and the absorbents, saw the quicksilver with which he had filled the absorbents of the intestinal canal of two seals, force its way into the vena portæ. In order to ascertain if such a communication also existed in other animals and in man, the absorbents of the intestinal canal of two dogs, one horse, one cow, and of three human bodies, were injected with quicksilver in the presence of our authors. In all these animals, and in the human bodies, in which the injection was be-

* Epistolæ duæ de motu Chyli et Sanguinis ad Th. Bartholinum in Bartholini Anatomia, edit 5, p. 789.

† De Existentia Vasorum Absorbentium in Intestinis. Upsal, 1731.

‡ Nova Experimenta et Observationes de finibus venarum ac vasorum lymphaticorum. Berlin, 1772, p. 5.

§ De Liene. Argentorati, 1774.

‖ De Lymphaticorum Systemate, Hal. 1787-8.

¶ Medical Records and Researches, selected from the Papers of a Private Medical Association. London, 1798. Vol. i.

gun soon after death, and carried on with the greatest care, the quicksilver reached the branches of the mesenteric veins and the vena portæ, without any exterior force being employed. On a closer examination, it turned out that the communication of the absorbents, with the veins of the intestines, took place in the mesenteric glands, and that all the veins proceeding from a gland, which was filled with quicksilver, also contained it. The communication was very quick and easy in the seals and dogs, in which the mesenteric glands, heaped together in a lump, form what is called the *pancreas asellii*. As these experiments had the same results in six animals and three human bodies, they make it very probable that there is a communication between the absorbents and the mesenteric veins in the parenchyme of the absorbent glands.

It may be objected to the preceding conclusion, that the passage of the quicksilver from the absorbents into the mesenteric veins takes place in the mesenteric glands, that the quicksilver entered into the veins in consequence of the absorbents being ruptured. But if this had been the case, both the veins and the absorbents must have been burst, which is very improbable. The explanation of this phenomenon by supposing the sides of both the veins and absorbents to be ruptured, is also contradicted by the quicksilver passing from the absorbents into the veins in every one of the bodies subjected to these experiments.

From the very probable communication of the lacteals with the mesenteric veins, our authors think themselves enabled to explain the appearance of streaks of a substance like chyle, of a whitish colour, which are perceived in the blood of the vena portæ, after taking food. This phenomenon was observed by Harvey, Swammerdam, de Bils, Menghini, J. F. Meckel, Brendel, Alexander Monro, and others. Even Cruikshank, who denies the connection of the lacteals with the veins of the intestines, acknowledges that he has often observed a chyle-like fluid in the blood of the vena portæ, though he did not know by what means it got there.

Our authors also mention, as another proof that a part of the chyle taken up by the absorbents in the intestinal canal passes into the vena portæ, the experiments made by tying the thoracic duct. G. Duverney* tied the left *subclavian* vein of a dog above the junction of the thoracic duct with this vein, and the animal lived fifteen days. Astley Cooper also tied the thoracic duct of several dogs before it enters the subclavian

* Mem. de l'Acad. des Sciences de Paris, 1675.

vein. Nine of these survived more than ten days, and no one died during the two first days after the operation, although, on dissection, the thoracic duct was found burst, and the chyle poured into the cavity of the abdomen. It is highly probable, that in these animals a portion of chyle had passed into the vena portæ, and that their lives by this means were supported for some time.

Though the appearance of chyle-like streaks in the blood of the vena portæ explained by this connection of the absorbents with the veins of the intestines, the passage of colouring, smelling, and saline substances from the intestinal canal into the blood of the vena portæ, does not take place in the same way. This is clear from several of these experiments. The chyle which was taken out of the lacteals in the eleventh experiment, which was made on a horse, to which indigo and camphor had been given, was as devoid of blue colour as that taken from the thoracic duct, and did not smell of camphor. Chyle taken from the lacteals of a horse, to which musk and spirit of wine had been given, emitted no smell of these substances: And, finally, the chyle taken from the lacteals of a horse, to which gmboge and spirit of turpentine had been given, did not look in the least yellow, and did not smell of turpentine. As the blood of the mesenteric veins, and of the vena portæ, emitted the odour of camphor and musk in these experiments, and its serum had a yellowish-green appearance probably derived from the indigo; and, farther, as the blood of the mesenteric veins, and of the vena portæ, appeared to contain several of the other substances exhibited, which were not found in the chyle of the thoracic duct, our authors conclude that there are other channels than the thoracic duct, and the absorbents connected with the veins of the intestines in the mesenteric glands, by which substances may pass from the intestinal canal into the mass of the blood. These channels can only be the *roots* of the veins of the intestines.

It follows from these experiments, that the veins of the intestines appear particularly to take up the heterogeneous substances, such as the smelling and colouring matters, the metallic and saline substances, while the absorbents of the intestinal canal rather absorb the proper nutritious matters. The examination of the blood taken from a branch of the mesenteric vein of a dog, to which sulphuro-prussiate of potass had been given, supports this opinion. This blood did not contain any chyle-like streaks, but sulphuro-prussiate of potass was perceived in it. Chyle-like streaks, however, appeared in blood taken from the trunk of the vena portæ.

The opinion that substances are taken up from the intestinal canal by the veins of the intestines, is farther supported by the appearance of these substances in the mass of the blood, although the thoracic duct has been previously bound up. Sir Everard Home* tied the thoracic duct in rabbits just before its junction with the subclavian vein, and then conveyed a dose of rhubarb into their stomach. On causing the animals after a short time to be killed, and their fluids examined, he found rhubarb in the urine, in the serum of the blood, and occasionally in the bile; but there was no trace of it in the chyle of the thoracic duct. It cannot, therefore, be objected, in this case, that the rhubarb had probably reached the blood-vessels through some of the side branches of the thoracic duct, which had been left untied. A. C. Mayer† also found prussiate of potass in the mass of the blood and in the urine of several animals, to which it had been given after a ligature had been applied to their thoracic ducts.

Finally, the effect of different poisons introduced into the intestinal canal, after the thoracic duct was tied, may be brought forward to support the opinion that substances are taken up by the veins. Magendie tied the thoracic duct of a dog in the neck, a little before its junction with the subclavian, and then gave it two ounces of a decoction of nux vomica, which is a strong poison for dogs. The animal died shortly afterwards, and in as little time as other dogs of which the thoracic duct had not been tied. On opening the body it was evident that this passage had been well secured, and that a double passage did not exist. On another occasion, two ounces of decoction of nux vomica were thrown into the rectum of a dog after the thoracic duct was tied. The effect was the same as if no ligature had been applied, and the animal died very speedily. As the nux vomica, like other similar poisons, so far as we know at present, only displays its pernicious effects when conveyed into the mass of the blood, and as it could not pass into this fluid by the thoracic duct in these experiments, it must have entered into it through the vena portæ.

Although, from the above reasons, it cannot be doubted that certain substances pass from the intestinal canal into the veins, yet nothing certain can be said of the manner in which they pass. Emmert‡ was of opinion that poisons affected the

* Philosophical Transactions for the year 1811, p. 1. p. 163.
† Deutsches Archiv. fur die Physiologie, B. III. S. 496.
‡ Uber die Wirkungsart der Gifte, in d. Tubingen Blattern, B. II. St. 1, S. 88.

blood by penetrating through the sides of the blood-vessels, aided by some attraction of the blood itself, in the same manner as the gravitating portion of the air forces itself in breathing through the sides of the blood-vessels of the lungs. It is more probable that there are short minute branches of veins arising from the mucous membrane of the intestinal canal, which are united with the sanguiferous veins of the intestines, and that the substances are taken up by these.

As the blood of the vena portæ, with those substances taken up by means of the absorption of the veins in the intestinal canal, and with a part of the chyle which appears to be poured into the veins by means of absorbents within the mesenteric glands, flows through the capillary vessels of the liver, and is mixed with some of the arterial blood of the hepatic artery before it passes through the veins of the liver and the *cava inferior* into the right auricle, and as the bile is chiefly separated, as an excrementitious matter, from the blood of the vena portæ, the relative proportions of which are thus changed in a peculiar manner, we must, at the same time, regard the liver as an organ of assimilation for those substances which are taken up from the intestinal canal. The liver, into the vessels of which, in the fœtus, the blood, returning with the absorbed substances, through the umbilical veins, is in great part poured, remains thus after birth and through the whole course of life an organ in which the substances taken up in the intestinal canal, partly by the absorbents and partly by the roots of the veins, are mixed with the venous blood, in order to repair the waste of the blood. In this respect there appears a great analogy between the action of the liver in the fœtus and after birth.

The ultimate result of the experiments performed by our authors on the channels by which substances pass from the stomach and intestinal canal into the circulating mass is this. The alimentary matters, the smelling, colouring, saline and metallic substances taken into the stomach and intestinal canal, after being mixed with several fluids, separated from the mass of the blood to promote assimilation, such as the saliva, the gastric juice, and the bile, may pass into the mass of the blood by several channels:

1. Through the absorbents and the thoracic duct.
2. Through absorbents which are united with veins in the mesenteric glands.
3. Through the roots of the vena portæ.

Those substances which are conveyed into the sanguiferous

system through the thoracic duct, as chyle, are mixed in their passage through the mesenteric glands and the thoracic duct, with a reddish coagulating fluid, secreted from the arterial blood in these glands, and in the spleen: which brings the chyle to resemble blood. The substances, however, which are carried to the vena portæ are assimilated to the mass of the blood, by being mixed with venous blood, and by the change which they suffer in consequence of the secretion of the bile.

Our authors also remark, as the result of some of their experiments, that it is, in their opinion, very probable that those substances which are taken up by the absorbents from the surface of the mucous membranes of the lungs, of the urinary organs, and of the organs of generation, and by the absorbents on the outer surface of the body, and even from the parenchyme of the organs, pass into the mass of the blood, partly directly into veins in the lymphatic glands, partly, however, through the trunks of the absorbent system. The substances taken up by the absorbents are mixed, to promote assimilation with a fluid secreted from the arterial blood in the lymphatic glands, renal glands, and thyroid gland, in the same manner as the chyle receives a fluid secreted in the mesenteric glands, and in the spleen.

Our authors inform us that they are engaged in an experimental inquiry into the changes which alimentary matters undergo in their formation into chyle, and in their passage through the lymphatic system, and how they are finally assimilated to the nature of blood. To the result of these experiments we look forward with anticipation of much instruction; for our authors, in the present work, have shown themselves to possess all the qualities required for success in such investigations.

We have postponed, to another opportunity, some very ingenious remarks on the use of the spleen, and on the secrete urinary passages.

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### Professor Mayer *on Absorption from the Lungs.*

As an appendix to the preceding article, we shall give the results of a series of very ingenious experiments made by Dr Mayer, Professor of Anatomy at Berne, on the injection of fluids into the trachea, which he conceived to be the easiest and best method of determining whether the veins possess

the property of absorption, and whether other fluids than chyle enter into the circulating mass.

This experiment of injecting fluids into the trachea was tried by Dr. Goodwin, and after him by Autenrieth and Schlaepfer,* but they took no notice of the absorption of the fluids thus injected into the lungs. The veterinary pupils at Lyons have also injected water into the lungs of horses, and have found that they can support a considerable quantity without inconvenience.

Professor Mayer read his Memoir at the Meeting of the Helvetic Society, held at Zurich, and we extract our notice from the Bibliotheque Universelle of Geneva,† a periodical work of great merit.

I have been engaged for many years in experiments, which prove the absorption from the lungs. In 1812, I published some of them.* Since that time, I have made 80 experiments more on the same subject; I performed analogous experiments on the absorption from the intestines, and I found that it is much less than from the lungs. I made these experiments on various animals, viz. on rabbits, dogs, cats, goats, hedge-hogs, &c. I performed them with different coloured fluids; with the infusion of turmeric, of rhubarb, of saffron, of indigo, of madder, &c. I frequently made use of a mixture of indigo, of saffron, and of water. Lastly, I employed solutions of the prussiate of potass, of nitre, of alum, of acetate of lead, muriate of iron, oxide of arsenic, oils, &c. &c.

The following are the summary results of these experiments:

1*st*, Animals support a considerable quantity of liquid injected into the lungs without experiencing mortal symptoms from them. Rabbits can support a dose of four ounces and a half of water in 24 hours. But these injections should be performed by an opening made in the trachea; for if we inject these fluids by the larynx, they excite the most severe symptoms of suffocation, and the animal soon sinks under it. The suspension of respiration during this irritation of the muscles of the larynx by the injection is the only cause of death.

2*d*. The symptoms of suffocation which arise from injections are not serious when we inject pure water; but they become so when we take thick fluids, for example oil, which obstructs the aërial

* Dissertatio Inauguralis, sistens Experimenta de effectu liquidorum quorundam medicamentosorum ad vias aeriferas in corpus animale. Auctore Schlaepfer, Praes. Autenrieth, Tubingæ, 1816.

† Bibliotheque Universelle, Sciences et Arts, Tome VII. p. 51. 8vo. Geneve, 1816.

* Dissertatio sistens Experimenta quædam in Animalibus aqua Suffocatis Instituta, Tubing. 1812.

passages; or some chemical solutions, which destroying the parenchyme of the lungs, prevent the oxydation of the blood, and produce extravasations of blood, and inflammation in the lobes of the lungs.

3*d*, The fluids and solutions injected into the lungs are absorbed, more or less quickly according to their nature, and their degree of concentration.

4*th*. This absorption is in general very great, but less in young and newly born animals than in adults.

5*th*, Absorption takes place by the pulmonary veins, for it has occurred in the space of three minutes; we find in the blood the fluids injected, before we perceive them in the chyle; we find them in the left auricle and left ventricle of the heart, long before we can see the least trace of them in the right auricle. Lastly, absorption is carried on even although we tie the thoracic duct.

6*th*, Absorption is likewise performed by the lymphatic vessels, but more slowly.

7*th*, The veins of the stomach and intestines also absorb, but in much smaller quantities.

8*th*, We can demonstrate in the blood the existence of fluids absorbed by the veins. It is easy to discover there the prussiate of potass, the muriate of iron, arsenic, &c. We can trace the prussiate of potass injected into the lungs, first in the arterial blood of the heart and arteries, then, if we continue the injection, in the venous blood. The sulphate or the muriate of iron, mixed with the blood, produces a green or blue precipitate.

9*th*, We find these fluids in abundance in the urine in the bladder, and in that in the kidneys. The prussiate of potass can be discovered in it seven minutes after the injection.

10*th*, The prussiate of potass is likewise deposited, and even in considerable qauntity in the serum of the pericardium, of the pleura, of the peritonæum; in the synovia, under the skin, and in the milk.

11*th*, When we have injected prussiate of potass, we can discover this substance after some hours, not only in the fluids, but also in many of the solids. Several of these parts then became green or blue with the muriate of iron, viz. the cellular tissue under the skin, and in the whole body, the fat, the serous and fibrous membranes. We can tinge, in green and in blue, by the solutions of iron, all the aponeuroses of the muscles, tendons, and the lateral and interior ligaments of articulations; for example, the circular ligament in the ileo-femoral articulation; the crucial ligaments in the femoro-tibial articulation. We find the other parts of the fibrous system in the same state, namely, the dura mater, the periosteum, and the pericardium, &c.

12*th*, The membranes of arteries and veins, even the valves of the heart can be entirely coloured blue. The mitral valve in the left

ventricle alone becomes blue, when we do not continue the injection long enough.

13*th*, The parenchyme of the liver and spleen cannot be coloured blue, but sometimes the cellular tissue around their great vessels. The lungs, the heart, and the kidneys, can be coloured blue.

14*th*. The secretory glands, namely, the salivary gland, the pancreas, the mammæ, become blue.

5*th*. Neither the substance of the bones nor the marrow becomes blue.

16*th*, The substance of the muscles, and that of the nerves of the brain, and of the spinal marrow, do not change their colour, by soaking with the muriate of iron. These organs appear to exert a repulsive and exclusive force, on the contact of fluids foreign to their nutrition. We may conclude from this that the opinions of many physiologists who say that poisons act mortally, when they are applied to parts of the nervous system, are not well founded, and are devoid of direct proofs.

17*th*, These experiments, which may throw some light on secretion, the reproduction and nourishment of bodies, have also taught me the passage of liquids from the mother to the fœtus. The experiments with the prussiate of potass succeeded very well. We can discover this substance in the water of the amnion, in that of the chorion, and of the umbilical vesicle, in the liquid of the stomach, in many solid parts of the fœtus, for example, in the kidneys, in the stomach, &c. as also in the placenta. When we lay a fœtus, to the mother of which we have given prussiate of potass, into a mixture of the spirit of wine and muriate of iron, we perceive it become blue coloured. Thus we acquire the most certain proof of the passage of fluid from the mother to the fœtus, a proof that we have vainly sought for till now in the history of physiology. The fluids taken into the blood of the mother are deposited in the tissue of the placenta, and are thence absorbed by the veins of the fœtus.

# MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

*New Method of treating Sarcocele, without having recourse to Extirpation of the Testicle.*

M Maunoir, of Geneva, has recently published a Memoir, entitled "Nouvelle Methode de traiter le Sarcocèle sans avoir recours àl'Extirpation du Testicule," pp. 27. 8vo., in which he proposes to tie the spermatic arteries, with a view to diminish the bulk of diseased testicles by determining the blood distributed to them into other channels. For this purpose, he makes an incision opposite the abdominal ring, to expose the spermatic chord, and to come as near as possible to the principal trunk of the spermatic artery, so as to tie it sufficiently high to interrupt the circulation of the blood through all the small branches which it sends off. We are recommended not only to avoid tying the Vas deferens, but also the spermatic veins. But before any operation is commenced, M. Maunoir says, " that it is essential to be able to determine whether the disease is a true sarcocele, or a medullary fungus of the testicle, or of the spermatic chord—affections of greater importance than sarcocele, with which they have but too often been confounded. In sarcocele the tumour is generally more uniform, and more firm; its volume does not exceed twice or thrice that of the healthy testicle; the spermatic chord remains unaffected. In the medullary fungus of the testicle, the organ usually acquires a more considerable size; the body of the testicle and the epididymis becomes soft, and affords a deceptive sensation of fluctuation, which has sometimes caused the case to be mistaken for hydrocele. If the disease is far advanced, the scrotum changes colour, becomes livid, and at length ulcerates. When this happens the chord commonly participates in the tumefaction, and in the deceptive fluctuation above mentioned. The swelling of the chord continues even up to the abdominal ring, and the abdomen cannot be pressed without causing great pain in the loins." Two cases are mentioned by M. Maunoir, in which he put in practice the new proposal. The following is the most striking:—A man, thirty-five years of age, without any assignable cause, was attacked with pain in the left testicle, which was continued along the spermatic chord, and extended to the lumbar region. A remarkable swelling also affected the testicle, and there was a deposition of fluid in the tunica vaginalis which was punctured. The accumulation again quickly recurred, and was evacuated twelve times

successively; the testicle at the same time acquired so considerable a size, that its extirpation, which had become necessary, appeared likely to be attended with danger. M. Maunoir, on the 8th of June, 1820, tied the spermatic artery, and divided it below the ligature. On the 4th of July, the diminution of the tumour was evident. He quitted the hospital on the 20th of August, when his testicle was perfectly without pain, and not larger than the opposite one. The pain was removed by the ligature as by enchantment and the radical cure of the hydrocele, at the same time, took place. Although we are of opinion that the proposal displays considerable ingenuity, and may certainly be applicable in some instances, as there are many kinds of swellings of the testicle; it might not in some be so prudent as the complete removal of the whole disease.

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*On the Manufacture of Surgical Instruments from Wootz.*

The substance called wootz is a kind of steel manufactured at Bombay, and in high estimation among the Indians: it admits of a harder temper than other kinds of steel; it is employed by the natives for constructing that part of gun-locks which strikes the flint, and for every other purpose where excessive hardness is necessary. But it cannot bear more than a red heat, which makes it work very tediously, for which reason the manufacturing of wootz is a separate art from that of forging iron: the magnetical power also can be communicated to it only in an imperfect degree. It is a carbonate of iron containing less carbon than common cast iron and more than steel.

Wootz has lately attracted the attention of Dr. C. F. Grafe, who has made several trials with it to ascertain how far it is calculated for the construction of surgical instruments. He considered that as the hardest materials furnish the sharpest instruments, and as wootz is distinguished by its superiority in this respect, it would be very likely to succeed. He accordingly procured from England a small quantity of wootz, and put it into the hands of an ingenious instrument maker, for the purpose of having some lancets, bistouries, knives for cataract, and couching needles made of it. Their manufacture was attended with difficulty, yet, from the pains taken by the instrument maker, the instruments turned out very well and received an extremely beautiful polish. Dr. Grafe has operated many times with them, has compared them with instruments made of common steel, and has found that they were sharper, and retained their edge longer, than the others; and he expresses his satisfaction with the cataract-knives and couching-needles which were also made. At the same time he invites other surgeons to make trial of these instruments, and to publish their results.

We are informed that Mr. Stodart has lately presented a complete set of amputating instruments to the College of surgeons,

which are manufactured from wootz, possess an extremely high polish, and appear to be very well made. It would, in our opinion, be a very desirable object to possess a less brittle material than common steel for the manufacture of instruments, and particulary for the knives used for lithotomy; which are called after the proposer, Mr. Thomas Blizard. We may mention, that in two instances we have witnessed the breaking of these instruments during their passage through the prostrate gland into the bladder; and that the extraction of the fragments was attended with considerable inconvenience to the operator. (For Grafe's account of the above instruments, see the Journal der Chirurgie und Augenheilkunde von C. Grafe, und ph. von Walther 3 es. stuck.

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*Survey of, and remarks on, Fifty Operations for Hernia. By Dr. Massalien, of Heunhuth.*

These fifty cases came under the observation of Dr. Massalien, during a practice of thirty years previously to the year 1810. Of these cases there were—

| | |
|---|---|
| 29 in males and . . . . . | 21 in Females. |
| Of which there were 25 inguinal and 4 femoral. | Of which there were 5 inguinal, and 16 femoral. |
| 11 Men and . . . . . | 9 Women died. |
| 19 inguinal and 3 femoral were on the right side; 5 inguinal and 1 femoral on the left. | 5 inguinal were on the right side; 9 femoral on the right, and 7 on the left. |

On two men the operation was performed in adherent Entero Epiplocele, without strangulation, since the reduction and the application of a proper bandage were impossible; the frequent colicky pains rendered the occurrence of strangulation probable; one of these was a scrotal, the other a femoral hernia, both on the right side, and in both the portion of omentum was separated from its adhesions, and removed. They both recovered quickly, and wore light trusses, to avoid a relapse. The remaining forty-eight were all strangulated, some for eight days, and one for ten, before Dr. Massalien was called; and to this it was owing that twenty perished after the operation. To the objection (if such could be made) that he should not have operated at so late a period, Dr. Massalien answers by mentioning one case on the ninth day, two on the sixth, and seven on the fifth, day of strangulation, in which the operation was performed with success. In one female on whom the operation was performed, the ninth day, a portion of the intestine was in a state of gangrene, and for a long time there was a discharge of fæces through the wound, but this ceased entirely after three months. In two other females, after a strangulation of five days, and in a man after one of four days, a discharge of fæces existed for four, eight, and eighteen days after the operation. but these patients also were perfectly well in four weeks. Five oper-

ations on the fourth day of strangulation, ten on the third, and three on the second were successful. Dr. Massalien observed that he was seldom called early enough, and the patients would then seldom submit soon enough to the operation. In one case of congenital hernia "with double strangulation," which had existed for twenty hours, and in which there was also a hydrocele, the man died. When the stricture of the abdominal ring had been removed by the incision, it was necessary to open the tunica vaginalis testis, as a portion of intestine was so closely strangulated by it as to prevent the escape of even a drop of water, though the latter amounted in quantity to a pint. This portion of intestine was in a state of sphacelas, and the upper portion was violently inflamed. The inflammation extended to the abdomen, and caused the patient's death. Three patients, on whom the operation had been performed after a strangulation of two days, and one after twelve hours, in which it was not necessary to enlarge the abdominal ring, died. The second died in five days, and the third not till fifteen days, after the operation; but of the cause of death Dr. Massalien could give no account, as the great distance prevented his seeing the patients after the operation. After such results, Dr. Massalien says, that he operates in every case where the patient is not in articulo mortis; but is, even in the best appearances, extremely cautious in giving a prognosis. One of the females was in her sixth month of pregnancy. The hernia, which was a right inguinal, had been strangulated more than two days. The patient did well, went her full time, and had an easy labour: Four of the cases were congenital herniæ: two of them died. Twenty-one were Entero-Epiploceles, and in seventeen of these itwas necessary to remove a portion of omentum, in some because it was gangrenous, in others because it could not be returned. Dr. Massalien thinks that the slightly sensible and delicate omentum diminishes very much the effects of the pressure of strangulation on the intestine; for of the entero-epiploceles there died only five in twenty-one; but of the simple enteroceles, fifteen in twenty-nine died. One female was attacked with trismus nine days after the operation, of which she died on the thirteenth day. Of this Dr. Massalien thinks the irritation of worms, and the access of cold air to the wound, were the causes; for she had previously passed worms by stool, and in a cold night the bandage came off. In most of these operations, it was necessary to divide the abdominal ring and Poupart's ligament. Where this was not necessary, dilatation was accomplished with the finger better than with "Arnaud's hook, improved by Richter." The latter, however, Dr. Massalien found useful in two cases. The incision was always directed towards the symphysis pubis, and Dr. Massalien says, he was always "fortunate enough to avoid the epigastric artery," except in one man; and in this case (which was evidently from his account, Ventro Inguinal Hernia,) he candidly reproaches himself with having made the incision too near the outer angle of

the ring. The patient died after some hours, from the wound of the artery not being discovered to exist. The hæmorrhage, at the commencement, appeared to have ceased, but actually was taking place into the abdomen. Twice Dr. Massalien had the misfortune to wound the intestine with the knife. In both instances the aperture was closed by suture; in one it healed completely without any escape of fæces; in the other rhe patieut died, but not apparently from this cause alone, for the operation had been performed too late.—(*Zeitschrift fur Natur und Heilkunde, Dresden.* 1 *en. B des.* 2 *es. Hft.*)

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*Cases of remarkable Dislocation of the Patella, communicated by Mr. L. Wheeler.**

The dislocation of the patella, inwards and outwards, frequently takes place, and particularly in the latter direction, on account of the external condyle being less prominent than the internal; the following are, however, examples of a curious and more uncommon dislocation of this bone:—

Sept 18th, 1821.—A coal-heaver fell down so as to allow both the fore and hinder wheels of an empty coal-waggon to pass over his right knee, in a direction from the inner to the outer side of the joint. He was immediately brought to St. Bartholomew's Hospital. The patella rested perpendicularly on its internal edge, and its external edge was inclined directly forwards so that its upper surface was turned inwards, and its under or articular surface outwards; in the same way as the extended hand might rest on its ulnar edge, instead of its palm. I speak of the horizontal position of the body. The bone was placed so nearly in a perpendicular direction, that it was not easy at first to ascertain which was its upper, and which its under or articular surface, but this was distinguished by comparison with the superior surface of the opposite patella. The insertion of the vastus externus into the external edge was the only tendinous attachment which was much stretched. I reduced the dislocation suddenly, but with some difficulty, by bending the thigh very much on the pelvis, drawing downwards the flexor muscles as much as possible, and by forcibly raising the bone at the same time that I turned it in its natural direction. Some inflammation in the joint followed, but was arrested by the usual means.

The following case related by M. Combette, will be found in the Journal Générale de Médecine for May, 1821;—M. C., thirty years old, dislocated his patella in wrestling by a motion which he could not describe. There was a projection at the knee, the leg was permanently extended. The patella rested completely on its

* For permission to relate the first case, I am indebted to the kindness of Mr. Stanley, assistant-surgeon to St. Bartholomew's Hospital.

edge, its articular surface being turned outwards. The internal half of its circumference was fixed in the articular groove formed by the elevation of the sides of the anterior part of the condyles of the femur.

Reduction.—An assistant raised the thigh, and with one hand M. Combette bent the leg on the thigh, while, with the other, he turned the patella from within outwards. The reduction was effected in an instant, and was followed by slight swelling and weakness. Six months afterwards, in dancing the same accident happened in a less complete degree; for the patient was able to replace the bone himself. The joint is perfectly well formed.—Another example, of the same kind of dislocation of the patella, is also related in the 64th volume of the Journal Général de Medicine, p. 79.

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## *Protrusion of the Tentorium Cerebelli.*

The following case is given by M. Lallemand, surgeon-in-chief to the Salpêtriere. Marguerite Recorda, aged twenty-three, applied to me for a slight ophthalmy. She was an idiot from childhood, and had on the occiput a tumour, which had increased from the size of the nut to that of an egg; it was moveable, indolent, and presented all the characters of an encysted tumour. I decided on removing it, and having made an incision round the base, proceeded to the dissection; but I was soon struck by a bright shining white colour, which I perceived at several parts of the base and which I thought resembled that of the dura mater. I mentioned my doubts to the pupils present, and passing my finger into the wound, assured myself that the base of the tumour was fixed in an osseous circle, formed by the occipital bone. I discontinued the operation and declared the serious effects I expected to follow. The patient suffered nothing on the day of the operation. On the following day pulse hard, head-ache, prostration (bleeding from the arm.) Vomiting of green bile occurred, and continued to increase in spite of antispasmodics, &c. till her death, which happened on the eighth day after the operation. On examination, the part of the dura mater, forming the back portion of the tentorium, was found protruding through a circular opening in the occipital bone, three lines in diameter. It contained a prolongation of the two lobes of the cerebellum, of the size of a nut. Several suppurated points were met with in the substance of this organ.

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## *Hernia of the Uterus.*

The same gentleman has likewise related the dissection of a hernia of the uterus. The organ, with all its appendages, had escaped from the cavity of the abdomen, through the opening of the crural arch, and had descended to the middle of the right thigh.

The vagina was so much elongated, that its connection with the cervix of the uterus was three fingers breadth below the bend of the groin. M. Lallemand has had copies taken in colour, plaister and wax (which are deposited in the Museum of the Faculty of Medicine,) of this original preparation of a disease, of which we possess but a few unimportant notices.—(*Annuaire Medico-Chirurgicale des Hospitaux de Paris*, 1819.)

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The *Phrenological Society of Edinburgh*, instituted at the commencement of the last year, appears, from the report of its Transactions just published, to be carrying into execution, with much spirit, the objects of its establishment. The Editor of this Journal is not a sectary of this system of Psychology,—he believes, as he intimated on a former occasion,* that the evidence hitherto adduced in its favour is not sufficient to prove its truth, whilst he considers that no arguments have hitherto been adduced by which it is absolutely refuted;†—but he nevertheless thinks that much benefit, especially to comparative anatomy and physiology, may be expected to result from this Society. Still more advantage would, probably, have resulted from it, had its fundamental laws been somewhat different. "The existence of this Society," it is said, "implies a Belief in the members that the Brain is the organ of the mind, and that particular parts of it are the organs of particular mental faculties; and that these facts afford a key to the philosophy of man." It is also stated, that the Society "hold the principles of Phrenology as no longer subject to doubt; and, while they recommend an attention to the subject to every reflecting and virtuous individual who considers a knowledge of himself and of human nature as an object of importance, they conceive themselves called upon to direct their own efforts rather to enlarge and apply the truths which phrenology reveals, than to strengthen the evidence on which the general principles rest." Such laws must exclude from the Society men who are qualified to promote its objects in an eminent degree. There are not a few physiologists who think that there may be some truth in this doctrine of phrenology, and who, while they entertain such an opinion, would readily contribute such observations as may occur to them, that tend either to prove or to illustrate its principles; but who will not enrol themselves

* When noticing *Mr. Combe's* Treatise on the subject, in the *Proemium* to the forty-third volume.

† These remarks, it should, however, be understood, are made in regard to the general tenor of what *Dr. Gall* has advanced on the subject, and not to the psychological notions peculiar to *Dr. Spurzheim*; especially those, generally, which he has expressed in his *Essai Philosophique sur la Nature Morale et Intellectuelle de l'Homme.*

amongst those who profess such a degree of belief in it as is indicated in the laws just transcribed.

It would appear, from the titles of the papers which have been read to the Society, that some very interesting discussions have taken place at their sessions: and a series of casts has been presented to the Society by Sir GEORGE MACKENZIE, comprising models of skulls of human beings, in the words of the Report, "from the lowest to the highest state of civilization." The number of ordinary members, at the time of the publication of this report, was forty-two, amongst whom there are nine medical men. We should like to give a list of the whole, but our limits forbid it: we shall, therefore, only mention the names of the honorary members, who are Drs. GALL and SPURZHEIM, and Dr. HERBERSKI, Professor of Medicine in the University of Wilna; and those of the "office-bearers," which are as follows: GEORGE COMBE, President; Sir G. S. MACKENZIE, Bart. JAMES BROWNLEE, and WILLIAM RITCHIE, Vice-Presidents; and ALEXANDER FLEMING, W. S. Secretary. (*London Medical and Physical Journal.*)

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*On the Antiseptic Power of the Pyrolignous Acid upon Fresh Meat, subjected to a Sea Voyage and a Hot Climate.* By J. STANLEY, M. D. In a Letter to Dr. BREWSTER.

As I am not aware that any experiments as yet have been published, wherein meat preserved by means of the pyrolignous acid was subjected to the test of a sea voyage and a hot climate, I have taken the liberty of sending you an account of the following trial, if you deem it worth your notice.

Having previously made several experiments with the above named acid, the results of which were favourable, on the 6th of October 1819, I prepared two pieces of fresh meat (beef) with the purified acid, applying it lightly over their surfaces by means of a small brush. After hanging up in my kitchen till the 12th of November following, I gave one of the specimens to the captain of a vessel bound for the West Indies, with directions to observe and note any change that might take place during his voyage, and to bring it back to me on the return of his ship to port. In the month of October 1820 he restored me the specimen. He had examined it several times on the voyage out and during his stay of some months at the Island of Tobago, as did several gentlemen resident there, but no perceptible change could be detected. On comparing it with the specimens kept at home, I could observe no sensible difference in their appearance. On the 21st December following, I caused both to be thoroughly boiled, and, when served up, they were declared by several gentlemen who tasted them with me, to be perfectly fresh and sweet, and, with the addition of salt and vegetables, a palatable and wholesome dish.

The above experiment I think fully proves the antiseptic powers of the pyroligneous acid, my specimens having been preserved for the space of fourteen months, and one of them subjected to a long sea voyage, and the action of a West India climate with success.

I have for the purpose of verifying the foregoing experiment, again prepared two specimens, the one mutton and the other beef, and sent them out to the same Island, with similar directions, and I make no doubt of the result being equally satisfactory. I remain, &c.

J. STANLEY

WHITEHAVEN, *Feb.* 7. 1821.

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*Bills of Mortality, &c. for London, for the Year* 1820.

| | | | | | |
|---|---|---|---|---|---|
| Abscess | 90 | Whooping cough | 794 | Venereal | 11 |
| Apoplexy | 233 | Inflammation | 1247 | Worms | 18 |
| Asthma | 702 | Inflammation of | | | |
| Bedridden | 1 | the Liver | 66 | Total diseases | 19098 |
| Cancer | 69 | Insanity | 223 | | |
| Childhood | 208 | Jaundice | 77 | | |
| Consumption | 3959 | Jaw Locked | 1 | | |
| Convulsions | 3066 | Measles | 720 | CASUALTIES. | |
| Croup | 104 | Miscarriage | 3 | Burnt | 22 |
| Diabetes | 1 | Mortification | 220 | Choaked | 1 |
| Diarrhœa | 9 | Old Age and | | Drowned | 96 |
| Dropsy | 791 | Debility | 2226 | Excessive Drinking | 2 |
| Dropsy in the Brain | 352 | Palsy | 176 | Executed* | 10 |
| Dropsy in the Chest | 90 | Rheumatism | 10 | Found Dead | 5 |
| Dysentery | 6 | Rupture | 32 | Fractured | 2 |
| Epilepsy | 9 | Scrofula | 7 | Frightened | 1 |
| Eruptive Diseases | 12 | Small-pox | 792 | Frozen | 1 |
| Erysipelas or St. Anthony's Fire | 13 | Sore Throat and Quinsey | 15 | Killed by Falls and several other Accidents | 78 |
| Fever | 1109 | Spasm | 46 | Murdered | 1 |
| Fever (Typhous) | 47 | Still-born | 725 | Scalded | 1 |
| Fistula | 8 | Stone | 18 | Strangled | 2 |
| Flux | 6 | Stoppage in the Stomach | 3 | Suffocated | 7 |
| Gout | 48 | Suddenly | 248 | Suicides | 21 |
| Hæmorrhage | 25 | Teething | 409 | | |
| | | Thrush | 79 | | |
| | | | | Total of casualties, | 250 |

| | | | |
|---|---|---|---|
| Christened | Males 11,993 | Females 11,165 | In all, 23,158 |
| Buried | Males 9,794 | Females 9,554 | In all, 19,348 |

* There have been executed in London and the county of Surrey, 38; of which number, 10 only have been reported to be buried within the Bills of Mortality.

Whereof have died:

| | | | |
|---|---|---|---|
| Under Two Years of Age | 4758 | Sixty and Seventy - | 1632 |
| Between Two and Five | 1975 | Seventy and Eighty | 1208 |
| Five and Ten - - | 887 | Eighty and Ninety - | 662 |
| Ten and Twenty - | 667 | Ninety and a Hundred | 119 |
| Twenty and Thirty - | 1484 | A Hundred - - | 2 |
| Thirty and Forty - | 2006 | A Hundred and one | |
| Forty and Fifty - | 2069 | A Hundred and Two - | 1 |
| Fifty and Sixty - | 1878 | A Hundred and Three | |

Increased in the Burials this year, 120

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Béclard et Cloquet, Anatomie de l'Homme ou description Figures Lithographiées de toutes les parties du corps Humain. Paris, 1821. Fol.

Troisfèvre. Division naturalle des Tempérameus, Paris, 1821.

Berard. Doctrine Médicale de l'Ecole de Montpelier. Tom. I. 8vo. Paris, 1821.

Charmel. Recherches sur les Metastases. Paris, 1821.

Gasparin. Des Maladies Contagieuses des bètes à laine. Paris, 1821.

Practical Remarks on disordered States of the Cerebral Structures, occurring in infants. By Whitlock Nichol, M. D. &c. &c. Small octavo, pp, 94. London, 1821.

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*Fig. 1.*

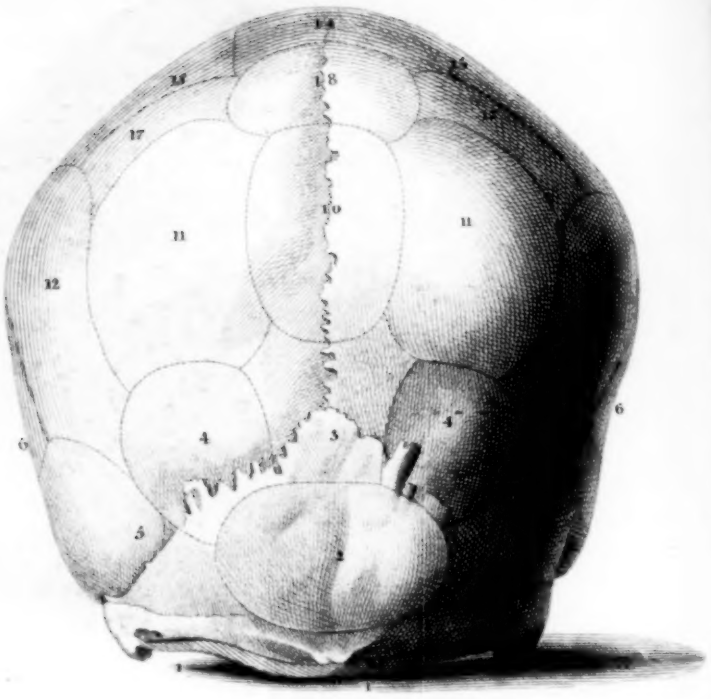
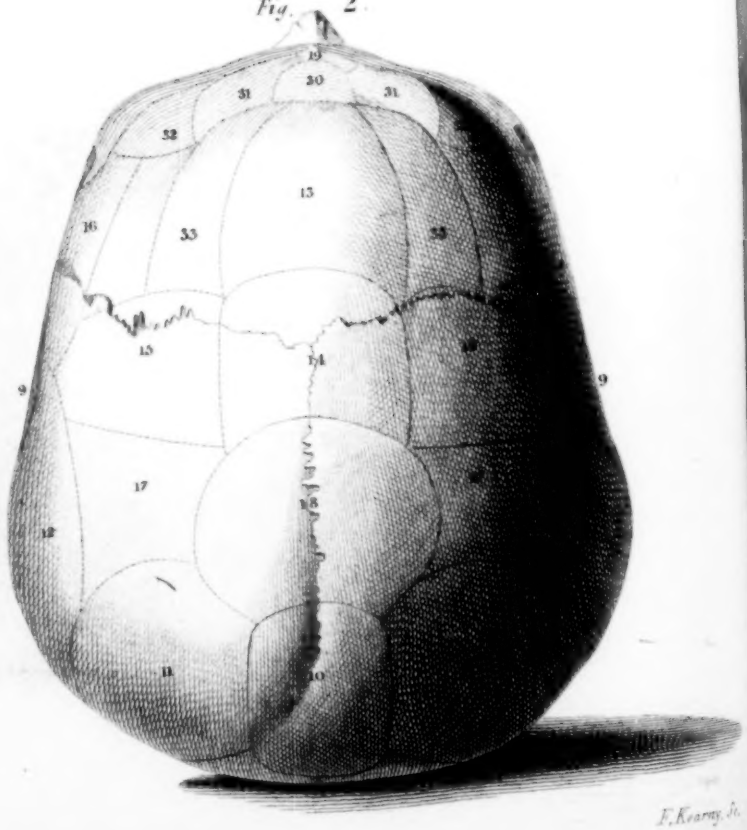



*Fig. 2.*




F. Kearny, Jr.

*Fig. 3.*

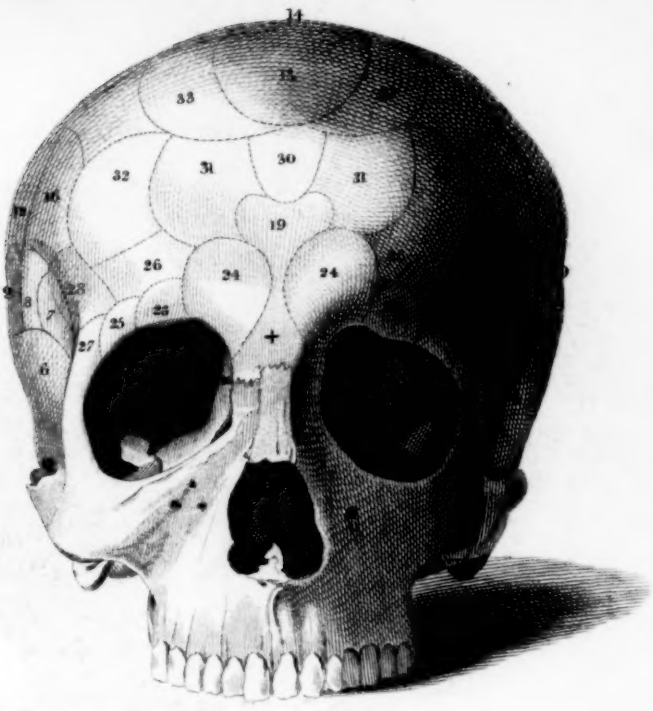
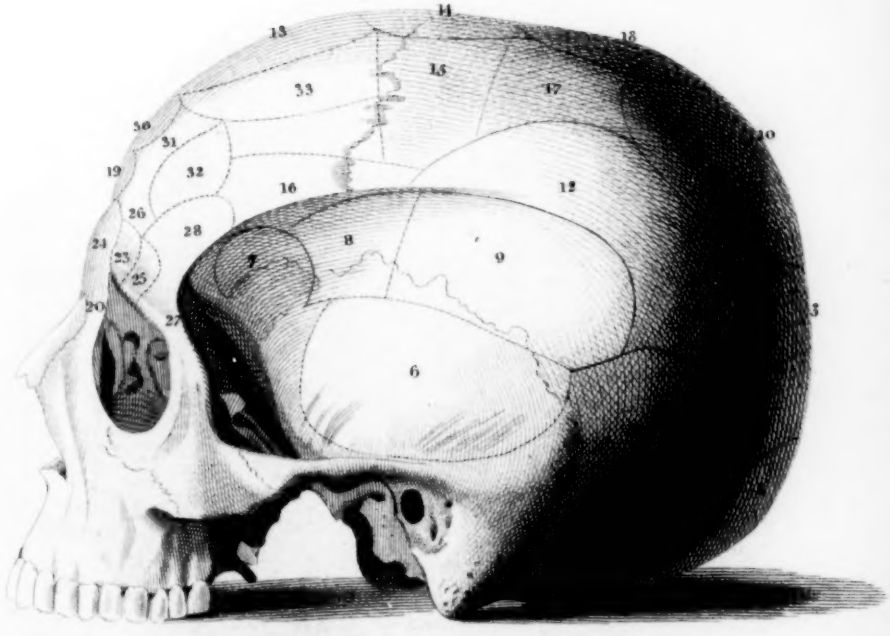



*Fig. 4.*

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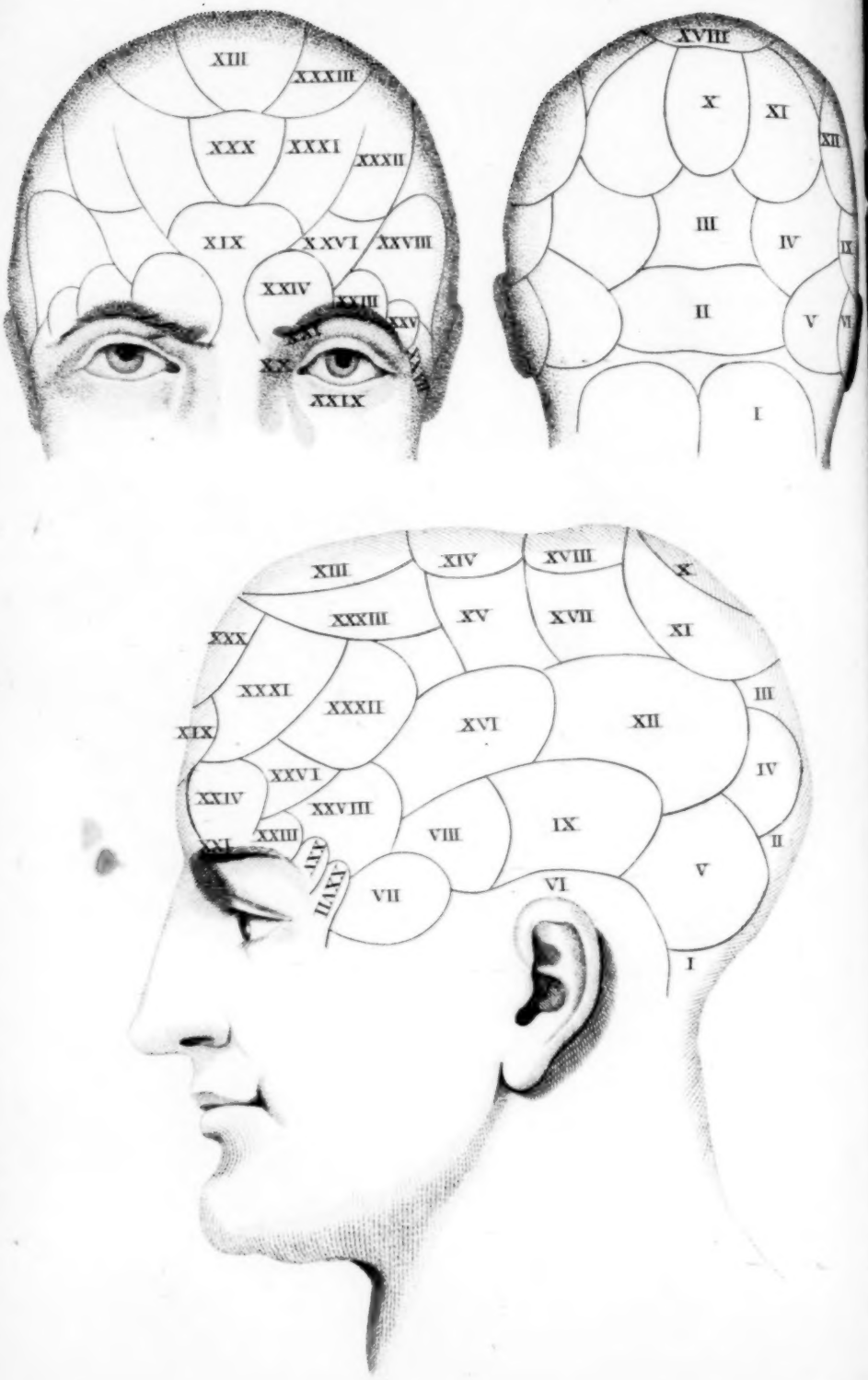


*For the Journal of Foreign Medical Science & Literature.*

Vol 2.

**THE FACULTIES ARE DIVIDED INTO**

**1. Order. Feelings.**

*1. Genus. Propensities.* Having the organs of

| NAMES OF THE ORGANS. | SITUATION OF THE ORGANS. | REMARKS. |
|---|---|---|
| 1. Amativeness, or physical love. | The cerebellum. At the base of the back part of the head, immediately above the middle of the neck. | Generally most developed in man and male animals; and not considerable till puberty. |
| 2. Philoprogenitiveness, or love of offspring. | The posterior part of the head, immediately above the former organ. | Most remarkable in women, and the females of other animals. |
| 3. Inhabitiveness—in animals the disposition to determine the place of dwelling—in man, love of country. | Probably seated above the centre of the preceding. | This is most conspicuous in certain animals that are fond of elevated situations. |
| 4. Adhesiveness, or disposition to form attachments. | Outward and upward on each side of the second organ. | Society results from this disposition, which is found in some of the lower animals. In man it disposes to friendship, and it is generally large in women. |
| 5. Combativeness, or disposition to quarrel and fight. | About the posterior lower angle of the parietal bone; or, in adults, about an inch and a half behind the ear. | Conspicuous in the courageous animals. In man it produces courage, and the tendency to attack. |
| 6. Destructiveness, or disposition to destroy. | On the side of the head, immediately above, and somewhat around the ear. | Very discernible in the carnivorous animals; also found in the human species. When this and the preceding organ are large, they give the tendency to rage and ferocity. |
| 7. Constructiveness, or disposition to build, &c. | At the temples, above the cheek bones; when large, it gives a kind of square appearance to that part of the face. | Remarkable in those animals which build, and in men noted for mechanical invention. |
| 8. Acquisitiveness, or disposition to obtain or acquire. | At the upper part of the temples, upward and backward a little from the preceding organ. | In excess, this leads to avariee; and, when conscientiousness is small, to theft, dishonesty, &c. |
| 9. Secretiveness, or disposition to conceal. | In the middle of the side of the head, immediately above destructiveness. | Cunning, dissimulation, hypocrisy, &c. are its results, when abused or improperly directed. Legitimately employed, it enables us to suppress improper feelings. |

*2. Genus. Sentiments.* Having the organs of

| | | |
|---|---|---|
| 10. Self-esteem, or self-love. | The middle of the upper posterior part of the head, or top of the back part. | When not checked, it gives rise to pride, disdain, overweening conceit of one's self. Most noted in men. When regulated by conscientiousness, it gives dignity and elevation to the character. |
| 11. Love of approbation, or desire of applause. | On each side of the preceding; or the posterior upper and lateral part of the head. | Ambition and vanity are its occasional products. Most remarkable in women. Well directed, it gives the love of fame, glory, and distinction. |
| 12. Cautiousness, or circumspection. | The upper posterior part of the sides of the head, or upwards and backwards, from No. 9. | Timid animals and very cautious men have it in a great degree. It produces fear when large. |
| 13. Benevolence, or kind affection. | The superior middle part of the forehead, or top of the fore part of the head. | The meek and peaceable animals have it much developed. In man it gives universal charity or philanthropy. |
| 14. Veneration, or tendency to adore. | The middle of the upper part of the head, a little before the crown. | Conceived to be proper to man, and to dispose to religion; as also to venerate any object to which it is directed. |
| 15. Hope, or inclination to expect and believe. | On each side of veneration. | In religion this sentiment produces faith; its excess occasions credulity. It paints the future fair and smiling. |
| 16. Ideality, or poetic and enthusiastic tendency. | A little above the temples, and immediately above No. 8, but extending farther back. | The opposite of cautiousness. Fancy, enthusiasm, poetical feeling, are referable to it. |
| 17. Conscientiousness, or sense of justice and duty. | On each side of the following organ. | None of the lower animals are thought to possess this sentiment. It is the moral sense of the metaphysicians. |
| 18. Firmness, or resoluteness of character, &c. | The top of the head, a little in front of self-esteem. | This serves to maintain the activity of the other faculties. It gives determination and perseverance; but in excess leads to obstinacy and infatuation. |

**2. Order. Intellect.**

*1. Genus. Knowing Faculties.* Having the organs of

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|---|---|---|
| 19. Individuality, or faculty of knowing external objects. | The upper portion is supposed to give the fondness for history, events, &c. and is called by Spurzheim Phenomena.—The lower portion to give a disposition to attend to matters of fact, and is by him called Individuality. | These contribute to universal but superficial knowledge, and are early developed. They are conversant with facts, but do not trace their relations. |
| 20. Form, the power of considering forms. | In the internal angle of the orbit of the eye. | Form is imagined to be the first quality of bodies that is considered by the intellect. |
| 21. Size, faculty of contemplating size. | Supposed to be near the preceding. | Size the next quality considered. |
| 22. Weight and momenta, &c.; faculty by which ideas of weight, &c. are acquired. | Conjectural; but supposed as above. | Consistency, density, and some other qualities, are supposed to be ascertained by this faculty. |
| 23. Colouring, faculty of perceiving the harmony and relation of colours. | The middle of the arch of the eyebrows. | This is not in proportion to the sense of sight. Some persons see figure and distance correctly, but cannot perceive minute shades of colour, and *vice versa*. |
| 24. Locality, faculty of contemplating places, situation, space, &c. | From above the inner angles of the eyes, towards the middle line of the forehead, or towards the lower sides of organ 19. | Gives rise to a propensity to travel, takes cognizance of space and localities, and is necessary to a landscape painter. |
| 25. Order, faculty of conceiving order, method, &c. | Betwixt the organs of colouring and number. Probable. | The notion of regularity is dependent on this faculty. |
| 26. Time, faculty of attending to the succession of events; duration. | Uncertain; but supposed to be outward and upward from 21 and 24. | Implies a succession of events. Supposed to give perception of time in music; and the feeling of duration. |
| 27. Number, faculty of calculating, &c. | About the external angle of the orbit of the eye. | Whatever concerns unity and plurality belongs to this faculty. |
| 28. Tune, faculty of perceiving melody in sounds; musical genius depends on it. | The lateral parts, or external corners of the forehead. | Much developed in singing birds and in great musicians. |
| 29. Language, faculty of acquiring and using arbitrary signs. | About the middle of the orbit, so as when considerable to give prominence to the eyes. | Not confined to oral discourse, but applies to all arbitrary signs whatever. |

*2. Gen. Reflect. Fac.* Having the organs of

| | | |
|---|---|---|
| 30. Comparison, faculty of finding resemblances, using examples, &c. | The middle of the superior part of the forehead, between 19 and 13. | Does not determine the kinds of comparison. Gives a fondness for analogies, and an acuteness of discrimination. |
| 31. Causality, faculty of examining causes and relations; metaphysical genius. | The superior part of the forehead, on each side of 30. | The general relation of cause and effect is its object. This and the preceding are essential requisites in a philosophic understanding. |
| 32. Wit, faculty of the ludicrous in general; gaiety. | The upper and outward parts of the forehead, on the side of 31. | Gives the perception of the ludicrous. |
| 33. Imitation, faculty of copying or mimicking the actions, manners, &c. of others. | The superior part of the forehead, on the sides of the organ of benevolence. | Very discernible in children, actors, mimics, &c. |

ADDENDA—Wonder, or feeling of the marvellous. Betwixt ideality and imitation. (Probable.) Gives the feeling of surprise, and of pleasure from novelty. In excess, produces astonishment and a tendency to the marvellous.